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CITY OF MANCHESTER
EDUCATION COMMITTEE

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Annual Report of The School Medical Officer

(Dr. HENRY HERD)

1937

EDUCATION OFFICES, DEANSGATE, MANCHESTER

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EDUCATION COMMITTEE

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of
The School Medical Officer

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STAFF

School Medical Officer : HENRY HERD, M.A., M.B., CH.B., D.P.H.

Assistant School Medical Officers :

Sheila Bridgeford, M.D., CH.B., D.P.H.
Caroline Rose Crystal, M.B., CH.B., D.P.H.
H. M. Dick, M.B., CH.B., D.P.H.
Alexander M. Dugan, M.B., CH.B., D.P.H.
Henry Duguid, M.D., CH.B., D.P.H., Barrister-at-Law.
Dorothy Guest, M.B., CH.B., D.O.M.S.
W. R. Honeyburne, M.A., M.D., CH.B., D.P.H.
E. M. Jenkins, M.B., CH.B., D.P.H.
H. Mackenzie, M.B., CH.B., D.P.H.
G. W. Matthews, M.R.C.S., L.R.C.P.
Mary A. J. Melville, M.B., CH.B.
S. F. Reynolds, M.R.C.S., L.R.C.P.
Mary D. Sheridan, M.B., CH.B.
L. W. Sparrow, M.B., CH.B.
E. Calderwood Smith, M.A., M.B., CH.B., D.P.H.
D. Oswald Taylor, M.D., CH.B., B.SC., D.P.H.
R. E. Winning, M.B., CH.B.
J. G. Woolham, M.D., CH.B., D.P.H. *Hon. Assist. Lecturer, Dept. of Physiology, The University, Manchester.*

Specialist Officers :

Consulting Orthopaedic Surgeons : { *E. D. Telford, F.R.C.S., M.SC.
*Harry Platt, F.R.C.S., M.S.
Consulting Ophthalmologist : *Harry V. White, M.C., M.D., CH.B.
Consulting Surgeon (Nose and Throat) : *Brian P. Robinson, M.B., CH.B., F.R.C.S. (EDIN.)
Psychiatrist and Medical Director of Child Guidance Clinic : *W. Mary Burbury, M.A., M.B., B.S., D.P.M.

School Dental Surgeons :

B. C. Betts, L.D.S.
B. Brown, L.D.S.
A. L. Craggs, L.D.S.
H. J. Eagleson, L.D.S.
G. G. Ellis, L.D.S., R.C.S.
S. B. Fillingham, L.D.S.
V. Higham, L.D.S.
Mary M. Peacock, L.D.S.
Jessie I. Ramsden, L.D.S.
Elizabeth Timperley, L.D.S.
J. Whitehouse, L.D.S.
*S. Wood, L.D.S., R.C.S.

School Nurses :

Superintendent Nurse : Miss K. S. Torrop

Nurse Barker
Barnes
Barton
Bertie
Blackburn
Blackham
Blezard
Broderick
Clunan
Collinge
Dickson
Farley
Fitzpatrick
Fox
Gibbs
Harrison
Haugh
Hetherington
Humphries
Jackson
E. Jones
E. Lloyd Jones
F. M. Jones
Nurse M. M. Jones
Lewis
Lowry
Maguire
Mason
Maxwell
McEntyre
McGrath
McHugh
McIntyre
Meech
Miller
Moss
Nicholson
Nixon
Noden
Owen
Palin
Parry
Pierce-Jones
Prince
Ramsey
Rhodes
Nurse Richings
Robinson
Rothera
Salvidge
Schofield
Shannon
Shout
Stanley
Stephen
Sternshine
Sullivan
Terry-Jones
Tomlinson
Underwood
Waine
Walker
Walton
Ware
West
Whetston
Whicher
Wright

* Part time duty

Principal Administrative Assistant : Harry Robinson
Administrative Assistants : Arthur Dunks, Harry Hinsley, George A. Hawley

Clerks :

George Webb
Arthur Chandler
John Dickinson
Thomas Brown
Norman Shirt
Norman Leigh
James M. Robinson (B.A.Admin.)
A. Victor Shaw
A. Roberts
Agnes Roscoe
Emma Haslam
Kathleen McEwen
Agnes L. Edgar
Edna Jackson
Constance Walford
Ethel Durrant
Elizabeth Hallard
Doreen M. Ferneley
Edith M. Sidebotham
Constance Plumb (Resigned)
Rose Gilder (Resigned)
Marjorie Poole
Olga Painter
Hilda Williams
Clarice Green
Jessie Ellison
Beryl Hargreaves
Joan Simpson

ORTHOPAEDIC CLINIC — GOULDEN STREET

Superintendent Masseuse : Miss B. L. Ashworth
Masseuses : Miss H. Heywood, Miss M. C. Holderness, Mrs. Finch
Nurse : Miss W. Johnson
Nurse Attendants : Miss L. Shaw, Mrs. Hughes

CHILD GUIDANCE CLINIC

Enquiry Officer : Miss B. J. Spedding, B.A.
Psychologists : *Mrs. E. Henshaw, B.Sc.
*William J. Messer, M.A., M.Sc.
* Part time duty

RESIDENTIAL SCHOOLS :

Summerseat Open-Air School for Delicate Girls	Summerseat, near Bury, Lancashire
Soss Moss School for Epileptic Children ..	Chelford, Cheshire
Swinton House and Parkfield Schools for Crippled Children (closed in June, 1937)	Swinton, near Manchester
Manchester Residential School for Crippled Children (Dr. Rhodes Memorial Home)	Cavendish Road, Didsbury (Opened in June, 1937)
Manchester Residential Open-Air School for Delicate Boys and Girls..	Styal, Cheshire

NON-RESIDENTIAL (DAY SPECIAL) :

Lancasterian School for Crippled Children ..	Goulden Street, Oldham Road
Crumpsall Day Open-Air School for Delicate Children	Middleton Road, Crumpsall

SCHOOL CLINICS :

Ancoats	Cannel Street, Ancoats
Butler Street (Dental)..	Butler Street, Ancoats
Central Clinic	Education Offices, Deansgate
Cheetham	Corner of Smedley Street and Cheetham Hill Road
Gorton	Gorton Road, West Gorton
Johnson Street (Dental)	Johnson Street, Bradford
Lancasterian (Orthopaedic)	Goulden Street, Oldham Road
Levenshulme	Stockport Road, Levenshulme
Moston	Moston Lane, Harpurhey
Newton Heath	Pilling Street, Oldham Road, Newton Heath
Northenden	Northenden Municipal School, Bazley Road, Northenden
Openshaw	1,460 Ashton Old Road, Hr. Openshaw.
Shakespeare Street	69 Shakespeare Street, Chorlton-on-Medlock
Stretford Road..	263 Stretford Road, Hulme
Child Guidance Clinic	Atherton Street School, Deansgate

PREFACE

The School Medical Officer has pleasure in submitting the Annual Report of the Work of the School Medical Department for the year 1937.

It is but seldom that a year passes without some new development, greater or less, in the scope of the Service. The outstanding event of 1937 has been the establishment as part of that Service of the Child Guidance Clinic which had for four years previously been maintained by a Committee dependent on voluntary help, both in personnel and finance. The transfer of the work of the Clinic to this Department involved the appointment of a part-time psychiatrist, of a full-time social worker, and of two part-time psychologists. Further reference to this development will be found in the body of the Report. During last year also, the Residential Cripple School was transferred from Swinton House and Parkfield to Dr. Rhodes' Home.

The work of this, as of all other Departments, depends for its success on the loyal service of each individual member of the staff whether doctor, dentist, nurse, masseuse, or clerk, and to one and all of these the School Medical Officer wishes to express his cordial thanks. Mention must also be made of the constant co-operation of other officials of the Education Committee, co-operation which is indispensable and which is greatly appreciated.

REPORT

CO-ORDINATION

The work of the School Medical Service continues to be closely co-ordinated with that of the Public Health Service in general, and particularly with the Maternity and Child Welfare and Tuberculosis Sections of the Public Health Department. There is also close relationship with the other sections of the Education Offices, particularly the Byelaws Department, where the assistance of each can be of great value to the other in dealing with the disposal and treatment of children and their attendance at school. It is worthy of special mention that recently the officers of the Byelaws Department have undertaken to refer to the School Medical Department full particulars of every child who leaves one school for another. This information is invaluable to the School Medical Officer as it enables the clerical staff to transfer medical schedules to their right places in the filing system and prevents a possible duplication of medical schedules when teachers are asked to supply the names, etc., of those children who fall to be examined in routine in the prescribed groups. This arrangement has become much more necessary since the advent of Senior Schools in the scheme of education.

SCHOOL HYGIENE

The hygiene of the schools receives the close attention of the Medical Officers on the occasion of their visits for the purposes of medical inspection. The light, heating and ventilation of the schools are the subject of a report as well as the state of the school furniture, the condition of the playground and the cleanliness of the lavatories. If any matter is adversely commented upon, the matter is referred to the Director of Education for attention.

FINDINGS OF MEDICAL INSPECTION

The routine inspections in elementary schools during 1937 amounted to a total of 32,830. Of these, 11,783 were entrants, who might be 3, 4 or 5 years of age, 9,190 were of children of 8, and 7,962 of 12 years. The remaining routine inspections numbered 3,895, composed partly of central school children and partly of children of 4 and 5 who had previously been examined as entrants at 3 years. The reduction in the total school population has made it possible to make a full examination annually up to 5 years of all children who have entered at younger ages whether into Nursery Schools, Nursery Classes, or Babies' Classes of Infant Departments. Taken in conjunction with the re-inspections which take place 6 months after the formal inspection, there is thus a six monthly survey (when necessary) of that group of so-called pre-school children who become school children prior to the compulsory age of attendance. On 31st March, 1937, there were on the registers of Manchester schools 5,568 children of 3 and 4 years of age.

Special Inspections of children of other ages than the routine for some specific defect or ailment amounted to 48,862, but the vast majority of those are cases sent direct to a Clinic by a teacher, or a nurse, or a parent. The ratio of " Special " to routine inspections has markedly risen. Comparing 1927 with 1937, for example :—

	Routine Inspections	Special Inspections	Ratio of " Specials " to " Routines "
1927	35,575	33,633	.94
1937	32,830	48,862	1.5

This ratio reflects the increasing tendency to make use of the Clinic as a place of consultation at any time rather than to wait for the next visit of the Medical Officer to the school.

The record of " findings " is open to misinterpretation if it is thought that the conditions have all been discovered for the first time. In a large proportion the conditions are already known. Defective vision, for example, is relatively seldom a new discovery at the age of 12 ; usually the case is already known and probably wearing correcting glasses and under yearly supervision at a Clinic, but it is none the less still a defect of the child, and has to be recorded as such.

Some of the findings, also, relate to conditions which are slight and temporary, being easily remediable. On the other hand these findings do not include so widespread a condition as diseased teeth, although here again probably a relatively small proportion could be assessed as of serious import.

In Table II will be found detailed figures of the number of children found to be suffering from each individual defect. It would seem desirable to devise some method of statement of the defects found which would provide a classification of the children rather than of the diseases and make it possible to separate more serious and permanent conditions from the more trivial and temporary. Such a classification is here suggested tentatively :—

1. Those who are in good health and free from signs of physical defect or disease.
2. Those who suffer from temporary or remediable conditions which under suitable treatment should be remedied.

   This would include most cases of skin disease and of external eye disease, a considerable proportion of cases of defective hearing and of ear diseases, chronic tonsillitis and adenoids, enlarged glands, anaemia, bronchitis, rickets, spinal curvature.
3. Those who possess defects which while not entirely remediable, are, under favourable conditions capable of correction or mitigation and not likely to hamper them unduly.

   This would include a large proportion of defective vision and squint, defective hearing and otitis media, the less serious types of Heart Disease (mitral regurgitation), tubercular conditions, some rheumatic children.

4. Those who suffer from conditions of a more serious type in which prognosis is either poor or doubtful—blind, partially sighted, deaf, partially deaf, epileptics, serious cases of heart disease, pulmonary tuberculosis, certain forms of crippling, etc.

   Cases could be classified with approximate accuracy at the time of medical inspection.

DETAILED FINDINGS

In the sections following relating to groups of diseased conditions, treatment as well as inspection is discussed.

(*a*) MALNUTRITION

The assessment in 4 grades as required by the Board of Education was continued. Details are given in Table II, Section B. The percentages in each grade found in the course of Routine Medical Inspection were as follows :—

Number examined	32,830
Percentage A (excellent)	19.32
B (normal)	72.58
C (slightly sub-normal)	7.97
D (bad)	.13

These percentages differ only very slightly from those of the previous year.

In addition, a nutritional survey, as required by the Board, was made of all children not due for routine Inspection at the time of the doctor's visits. Altogether 72,660 children were surveyed of whom 46 (25 boys and 21 girls) were classed in grade D.

Reliability of Assessment

The value and reliability of this nutritional grading has been very much doubted by many—perhaps most—medical officers since its inception. It is impossible by a mere general survey of a child—his stature, bulk, skin colour, muscle tone, brightness, etc.—to say definitely of him or her that he or she is now or has been in the past adequately or inadequately fed. D cases may be selected with a certain confidence but delicate distinctions between A and B, B and C, and even C and D are out of the question. A grouping of A and B into one class and of C and D into one might be more reliable, but even then there would be many borderline cases.

A startling revelation of the unreliability of the grading scheme was provided in 1937 in a lecture delivered in November by M. R. Huws Jones, M.A., B.Sc., to the Royal Statistical Society on " Physical Indices and Clinical Assessments of the Nutrition of School Children." Among other things, this lecture gave an analysis of the results of assessment of Nutrition of groups of the same children by different Medical Officers. The larger part of the trials were carried out in Liverpool, Manchester, Bootle, Wallasey and the counties of Lancashire and Cheshire.

It may be interesting to quote some of the Manchester findings. 168 boys were surveyed from the point of view of nutritional condition by each of four Doctors. The distribution of nutrition as assessed by each is shown in the following table :—

Grade of Nutrition	Doctors No. 1	No. 2	No. 3	No. 4
A	19	25	13	5
A–B	—	—	—	26
B	139	128	140	90
B–C	—	—	—	35
C	10	15	15	12
C–D	—	—	—	—
D	0	0	0	0
	168	168	168	168

One Doctor definitely separated the borderline cases amounting to 61 of the whole 168. Some of the other figures may not seem so widely discrepant, particularly those of No. 1 and No. 2 but unfortunately their disagreements on individuals are considerable. All the 10 C cases of No. 1 are not included in the 15 of No. 2.

The following table shows the measure of disagreement :—

Grade of Nutrition	Number of boys placed in a grade by All 4 Drs.	3 Drs. only	2 Drs. only	1 Dr. only
A ..	3	5	7	21
A–B ..	—	—	—	26
B ..	68	52	27	15
B–C ..	—	—	—	35
C ..	1	6	9	12

More than half the children classed as " excellent " are only so classed by one Doctor, and in only one case is there unanimity in grading " C."

As confirmatory of our suggestion that a grouping of A and B on the one hand and of C and D on the other would be better is a table showing results of such grouping.

Nutrition	Doctors No. 1	No. 2	No. 3	No. 4
A or B	158	153	153	121
C or D	10	15	15	47

No. 4 diverges most from the average because of the inclusion of the " B–C " cases in the lower group ; further analysis showed that all the Doctors agreed as to this grading in 115 cases (68.5 per cent.) and disagreed in 53 (31.5 per cent.).

The only safe deduction from these findings is that any statements as to the amount of sub-normal nutrition in a community, based upon the observational method recommended, do not deserve much credence. More scientific methods for the discovery of missing elements in the diet of any individual by the application of certain physical tests have received much notice in the medical journals in recent months but they are not such as can be applied practically under the conditions of the School Medical Service. It remains still the case that the economic test, the test which reveals that a child cannot be receiving an adequate diet on the income available for feeding him, is the only reliable one so far suggested for detecting present malnutrition or preventing future malnutrition.

Special Inquiry into Malnutrition and Rickets

A good deal of attention has been given in recent years by various Doctors to the presence of ricketty signs among young children. Official statistics of School Medical Departments have shown a remarkable decline in the frequency of this disease. Rickets is a condition affecting mainly the growth of bone, and the main cause of its occurrence is undoubtedly faulty diet, or in other words it is an outward expression of subnormal nutrition. The presence of any of the recognised bony signs of Rickets—bossing of parietal bones, knock-knee, bony changes in chest wall, etc.—in children of school age would indicate inadequate diet in certain particulars in pre-school years.

In the yearly record of findings of routine medical inspection in Manchester, we find the percentages of Rickets in Entrants to be as follows :—

1914	2.6 per cent.
1919	7.3 ,,
1931	.96 ,,
1937	1.07 ,,

That there has been a great decrease in the number of cases appears then to admit of no doubt, and examiners can also witness to the fact of the lessened severity of individual cases showing signs of the disease.

The increase of interest in recent years, however, in the subject of Nutrition has led some observers to look in a more intensive way for slight signs. Dr. McGonigle, Medical Officer of Health for Stockton-on-Tees, investigated the incidence of Rickets among elementary school children in Durham County about 1922, using as the signs of the disease, bossing of the parietal and frontal bones, bony changes in the chest wall, knock-knee and bowlegs. When two or more of these signs were discovered, or one in marked degree, the child was regarded as rachitic and it was assumed that at some time there must have been inadequate nourishment. Out of 2,676 children examined (of the 5 year, 8 year and 12 year groups) 83 per cent. were found on this basis to be definitely ricketty, 11 per cent. to be slightly so ; and only 6 per cent. to be free from Rickets. In view of the fact that this inquiry was carried out within 4 years of the War period, and therefore that all the children included in it had to varying degrees (according to age) suffered from food deprivation (confirmed by our own figures quoted above) the result is not entirely surprising.

In 1927, a further inquiry was made in connection with a Board of Education investigation into the causes of adenoids and tonsillar enlargement. 1,638 5-year old children were examined so that war feeding was eliminated. 66 per cent. were found to show two or more signs of Rickets and 12.5 per cent. had none. These figures, though less, are still large.

Still more recently Dr. Wilkins, an Assistant School Medical Officer in Birmingham, has reported on 1,083 children of 5 years of age. His percentages are as follows :—

Bossing of parietal bone	74.2 per cent.
Deformity of chest wall	89.4 ,,
Knock-knee	76.7 ,,
Bowleg	.7 ,,

Dr. Wilkins did not distinguish between cases showing one, two, three or four of these defects, and appears to regard a child showing even one defect as definitely pathological. On this basis he did not find a single case out of the 1,083 children without at least one sign of Rickets—indeed he says that " almost every child examined presented at least two well-defined defects."

It was decided to carry out a similar enquiry in Manchester in several schools in the course of ordinary routine inspection, a little more time being allowed for each individual case than is usually allotted for such inspections. Secondly, it was thought advisable that the examinations should not be carried out by only one doctor but by all the fourteen doctors engaged in medical inspection. This would, it was hoped, get rid of the possibility of individual bias in any one direction. Instructions were circulated as regards the discovery of the various conditions noted on similar lines to those of the Government Enquiry referred to, except that with regard to knock-knee, Dr. Wilkins' method of assessment was adopted. These instructions were discussed at a preliminary meeting of the staff. At the same time the condition of the dentition was reported upon on the lines of Dr. Wilkins' inquiry, the number of children with perfect dentition being recorded, and the number of defective (including lost) teeth per head. Only entrants (3, 4 and 5-year olds) were included.

The results obtained are much less spectacular than was the case in the other inquiries above referred to :—

Total number of children examined	1,602	
Number showing bossing of parietal bones	138	= 8.6 per cent.
,, ,, chest deformity	207	= 12.9 ,,
,, ,, knock-knee	256	= 15.9 ,,
,, ,, bowleg	29	= 1.8 ,,
Number with one defect	283	= 17.6 ,,
,, ,, two defects	143	= 8.9 ,,
,, ,, three ,,	20	= 1.25 ,,

Only just over 10 per cent. showed two or more defects and about 28 per cent. one or more.

No individual Doctor's result shows very marked departure from this general average, with the exception of two who found 38 and 39 per cent. of the children respectively to show bossing of parietal bones. The figures of two other Doctors who show the highest figures throughout are as follows :—

	No. examined	Bossing	Chest	Knock-knee	Bow-leg	1 defect	2 defects	3 defects
General Average	1,602	8.6	12.9	15.9	1.8	17.6	8.9	1.25
Dr. X. ..	284	13.7	17.6	16.1	—	16.1	12.7	1.7
Dr. Y. ..	182	7.7	29.1	13.7	—	34.0	18.1	4.4

Under no heading do any of these figures approach to those recorded by Dr. McGonigle and Dr. Wilkins.

One of the medical officers—Dr. G. W. Matthews—questions the policy of accepting all chest deformities as evidence of Rickets and suggests that they may equally well, indeed more readily, have occurred from pyrexial conditions in early life especially when bronchial trouble is present, or from debilitating conditions such as worms. It may also be a matter for consideration whether some of the conditions recorded may not be regarded as normal physiological variations rather than as pathological departures from the normal.

Dr. W. R. Honeyburne gives some interesting observations of 128 of the entrants whom he examined. He classified these cases in regard to nutrition and compared the results with the Rickets findings." " Parietal bossing " he found was associated with poorer nutrition than were deformities of chest or legs, as is shown by the following table :—

Nutritional Grades in Relation to Ricketty Deformities

	A	B	C	D
All cases	6.25	83.59	10.16	0
Parietal bossing ..	0	66.67	33.33	0
Chest deformity ..	0	88.89	11.11	0
Knock-knee ..	6.66	80.0	13.34	0

" One-third of the cases showing parietal bossing were of ' C ' nutrition and only just over one-ninth of the chest and leg deformities.

" A similar table shows percentages for children with none, one, or two ricketty defects :—

	A	B	C
No defects	7.00	85.00	8.00
1 defect	5.88	82.35	11.77
2 defects	0	72.73	27.27

This table shows a definite relationship between number of defects and quality of nutrition."

The inquiry into dentition did not give any definite result. Through a misunderstanding, some doctors only examined the teeth of children showing at least one sign of Rickets. 1,330 were examined and of these 325, or 24.4 per cent. had perfect sets, and the average number of teeth diseased and lost in the others was 5.3. Possible Rickets, or poverty of nutrition can, however, only be regarded as one factor in the production of disease in teeth. (See Dr. Woollam's report later.)

(b) UNCLEANLINESS

The number of cases of uncleanliness under the supervision of the nurses at some time during the year was 12,975, being equal to 13.4 per cent. of the population in the elementary and district central schools. The total, however, is 1,415 less than in the previous year. The percentage of nits only amongst the cases under supervision was 92 against a percentage of 84 in the previous year, an increase which signifies improvement. Thus, whilst the grosser infestations equal 15 per cent. it is slightly less than in the previous year. Infestations by body vermin remain about the same, being less than .5 per cent. of the cases under supervision.

The number of children it was found necessary to cleanse compulsorily was 54, being slightly higher than in the previous year and it was not necessary in any case to institute legal proceedings on account of a relapse into a verminous condition, after compulsory cleansing. In 205 instances the parents agreed to the voluntary cleansing of their children's heads and this was carried out at the various clinics.

The average number of visits paid to each department of the schools during the year for the purpose of uncleanliness inspections was 12, and the total number of inspections made by the nurses was 252,886.

During the visits to the schools for this purpose the nurses make a note of any cases of minor ailment not receiving treatment, and these as a rule are referred to the School Clinic. These inspections also account partially for the very small number of cases of minor ailments discovered at the routine medical inspections.

The work of the school nurses has been reorganised recently, and it is hoped to be able to pay much more attention to the question of uncleanliness than has been possible in former years.

(c) MINOR AILMENTS

Skin Diseases

Skin diseases continue to be fairly prevalent amongst school children and during the year 10,836 new cases were discovered. It is a pleasing factor to record that only 10 per cent. of these cases was discovered during routine medical inspection, the remainder being discovered by the school nurses on their visits to schools, or by teachers or parents and referred to the School Clinics for confirmation and treatment. From Table IIA it will be observed that the four cases of ringworm of the scalp discovered during the year were found apart from routine medical inspection and out of a total of 907 cases of scabies 95 per cent. were found by nurses, teachers, or parents. So far as impetigo is concerned only 3.4 per cent. were discovered at the routine medical examinations in the schools. These facts suggest that the work of the nurses undertaking school and district duties is carefully and systematically carried out.

Unfortunately statistics do not always convey a true picture of a particular situation. While the numbers of cases of skin disease discovered last year is not materially different from that of its predecessors, the figures do not show the decline in the severity of the different infections. It is undoubtedly true that taken generally the cases are much slighter than was the case 15 to 20 years ago. This is in the main due to the regular visits of the nurses to the schools for the purpose of uncleanliness inspections together with the increased vigilance of the doctors and the desire of the parents as a whole to have skin affections treated immediately they are observed.

In order to obtain some indication of the severity of the different infections, it was considered that the periods for which cases were excluded from school might give some information. The whole of the records dealing with the treatment of impetigo have been scrutinised and it is found that the average number of school sessions for which a child is kept out of school while suffering from this disease on account of his condition being a danger to others is between 9 and 10 sessions. Although there is no definite information as to the number of sessions lost by these cases 15 to 20 years ago it is known that children were frequently absent from school for periods of one to two months. In those days " a few sores " were not considered to be of any moment and the children were only referred for treatment when the disease made the child extremely unpleasant to look upon. The present methods of discovering and treating these cases is a distinct gain to the child and to the Education Authority.

Scabies

The treatment of cases of scabies continues along similar lines to those of previous years, that is, the child is given a bath and simultaneously the clothing is stoved at the commencement of treatment and during the last treatment before discharge. As a rule three treatments are given by rubbing " Kathiolan " over the affected parts and this is allowed to remain until the next day when the treatment is repeated. The child is instructed that no part of the body which has been treated must be washed between the attendances at the Clinic. As a rule three of these treatments are sufficient to effect a cure, though a further treatment is generally given to restore the skin to a normal condition.

In order that all affected members of a family may be treated simultaneously, the Medical Officer of Health is notified of the occurrence of every case of scabies so that the Health Visitor may visit the home and arrange for all members of the family not of school age to receive treatment. The Public Health Authorities attend to the treatment of all who are not school children, but the co-operation between the two departments is such that occasionally the Public Health Department may undertake the treatment of a whole family or the School Medical Department may undertake the treatment of all children under school age and other members of a family. This arrangement is governed by the requirements of the families concerned.

During the year under report 907 cases of scabies received treatment at the School Clinics.

Ringworm

Ringworm of the scalp has almost disappeared during the past year, only four cases coming to the notice of the School Medical Officer. This is the lowest number in any one year since the inception of the scheme of School Medical Inspection and treatment. It must be a definite gain in grant to the Education Committee. Of the four cases three were treated by X-rays by the Education Authority and the other received X-ray treatment at a hospital.

The number of cases of ringworm other than the scalp known to the School Medical Officer was 93 and of these 91 were known to be receiving or to have had treatment supplied during the year.

A short report follows by the Medical Officers who undertook the treatment of these cases by X-rays and the diagnosis of cases where there was doubt.

" Reduction in the number of cases of scalp ringworm has continued. In the year 1937 only four cases of ringworm of the scalp received treatment by X-ray therapy. These were cured and discharged. At the end of the year there were no cases of scalp ringworm under treatment. The vigilance of the nurses at the clinics and in their district inspections was found of considerable help in the detection of all suspicious scalp diseases. The use of " Wood's glass " was found a ready means of diagnosis provided that no treatment had been given prior to examination at the Central Clinic. The microscope in all cases decided the diagnosis definitely. All family contacts of school age continued to be examined when a positive case was found.

" During the year 1937 no cases of scalp ringworm occurred at the Institutions under the care of the Elementary Authority.

" During the year 23 cases of Verruca received treatment by X-radiation. Eleven cases were discharged cured and 12 continued under treatment. It was found that the flat multiple warts responded readily to X-ray treatment.

" One case of Psoriasis received treatment and was discharged cured. Two cases of Clavus received X-ray treatment and one has been cured and discharged. A change has been made in the X-ray equipment. Philip's Metalix outfit has been installed. The working of this unit has been found much simpler and it is steadier in output. Troublesome overhead high tension gear has been superseded by the shockproof and rayproof Sunic standard apparatus."

D. Oswald Taylor
L. W. Sparrow

Impetigo

During the year 4,302 cases of impetigo were known to the School Medical Officer and all, with the exception of 74 cases, were treated at the School Clinics. Of the total 23 were cases of impetigo of the scalp only or of the scalp in addition to other parts of the body. As mentioned in the introduction to the treatment of minor ailments the average number of school sessions lost owing to the child being excluded from school was between 9 and 10. If the latter figure is taken the number of sessions lost was 43,020, or a loss in grant to the Education Committee of almost £270. It is believed that a large part of this lost time can be avoided and consequently the money saved by greater attention to uncleanliness of the head. With this end in view the nursing staff has been strengthened and the work reorganised.

Other Skin Diseases

The number of cases of other skin diseases (non-tuberculous) continues to remain fairly large. During the year 5,609 cases were known and of these 5,362 received their treatment at the School Clinics.

For many years it has been the practice to bring all cases of minor ailments daily to the School Clinics for treatment and this practice undoubtedly reduces the period of infection and consequently the number of sessions during which the child is required to be excluded from school. Domiciliary treatment as a rule is ineffective, and as a result there is no waste of medicaments as ointments, lotions, etc., are properly applied. Many years ago it was found that by bringing a child for daily treatment at a clinic, the length of absence from school was reduced and the quantities of ointments, bandages, etc., supplied were also reduced.

Miscellaneous Cases

Minor injuries, bruises, sores, etc., account for more than 50 per cent. of the cases of minor ailments treated at the clinics.

As mentioned in a previous annual report many of these cases could receive adequate treatment at home, but as they are sent to the School Clinics they cannot be refused nor can they be sent home and advised of the treatment to be carried out. There is always the possibility of a minor injury or a bruise developing into a more serious condition and the officers of the Department cannot be expected to cease supervision of any case until the condition for which a child attends a clinic has been remedied.

The number of cases of miscellaneous minor ailments known to the department during the year was 25,897 and of this total 25,463 were treated at school clinics.

(*d*) VISUAL DEFECTS AND EYE DISEASES

(1) *External Eye Disease*

The number of cases of this class known to the School Medical Officer during the past year is 630 less than in the previous year. There has not been any outbreak of eye disease in any particular district of the city, the incidence being evenly distributed throughout the city. As mentioned in several reports during the last ten years, the attacks of conjunctivitis are not so severe as was the case in the early years of school medical inspection.

(2) *Visual Defect and Squint*

The scheme for attention to children with visual defects continued in operation, and during the year 11,568 children in the elementary schools received attention. In 8,722 instances the child was submitted to refraction at the School Clinics and in 2,846 instances a test by test type was sufficient. All cases of squint, hypermetropic astigmatism, and myopia are seen yearly and in some instances every six months and all undergo refraction. Of those submitted to refraction glasses were prescribed in almost 50 per cent.

Dr. H. V. White, the Committee's consultant oculist, continues to carry out his treatment of cases of squint as outlined in last year's report and to examine all cases of visual defect specially referred to him by the Medical Officers.

The scheme for the supervision of children provided with glasses has been outlined in a previous annual report and still continues to be part of the routine work of the Department.

(*e*) NOSE AND THROAT DEFECTS

The scheme of treatment of cases of adenoids and enlarged tonsils has been carried out on similar lines to previous years. All cases wishing to take advantage of the Committee's scheme are seen by the consultant aurist, Mr. Brian Robinson, F.R.C.S.Ed., at the Education Offices, Deansgate, and those considered suitable for operative treatment have the operation carried out at the Booth Hall Hospital for children, a Hospital under the control of the Public Health Committee. The number of cases of nose and throat defect which received operative treatment at this hospital was 998 and the number which received treatment at other hospitals or by the private practitioner was 258, making a total of 1,256.

The number of cases of nose and throat defects in general which received other forms of treatment is somewhat larger than in previous years, and this number is likely to increase owing to the discovery of early cases of deafness by means of the gramophone audiometer. As the majority of the cases are deaf owing to catarrhal conditions of the nose and throat the cases are classified under the heading of nose and throat conditions and not as cases of defective hearing.

The whole subject, however, is one on which Mr. Brian Robinson has made a special report, and this will be found in the following pages.

(*f*) EAR DISEASE AND DEFECTIVE HEARING

The number of cases of minor ear defect attending the School Clinics for treatment was practically the same as last year. The total, however, includes a number of cases discovered by the gramophone audiometer.

All cases of ear defect are seen by the consultant aurist where the condition has persisted for more than six weeks or where a case has been treated previously and has relapsed. The consultant pays a visit to each clinic every six or eight weeks and inspects most of the cases receiving treatment at the time of his visit. During the year he has undertaken operative treatment at Stretford Road Clinic of cases of early polypi, the anaesthetic being administered by Dr. S. F. Reynolds, one of the Assistant School Medical Officers.

Zinc Ionisation Treatment

Dr. Reynolds is responsible for the treatment of certain cases of ear disease by zinc ionisation, and he makes the following short report on this treatment.

" The facilities for treatment by zinc ionisation were extended to Gorton Clinic in the latter months of the year, but there has been insufficient time for any particulars of results to be recorded.

" The following figures show the amount of work undertaken by this method and the results obtained at both Stretford Road and Gorton Clinics :—

Number of cases treated	93
Number of treatments given	120
Number discharged as cured	41
Number still under observation	52

" Particulars of cases carried over from the previous year :—

Number of cases brought forward	45
Number discharged as cured	24
Still under observation	21

S. F. Reynolds "

Mr. Brian Robinson, the School Aurist, contributes a section on the work of the year as follows :—

" That the occurrence of severe deafness, especially in the case of children, is a tragedy, need hardly be emphasised here. Although their defect does not render them as dependent on others as the blind, the deaf are shut off in a world of their own, and tend to live an isolated life. It is a strain to talk to anyone who is really deaf, so that most of us tend to avoid their company, with the result that deaf people become lonely, often self-centred and morose.

" Moreover, in the case of children, normal mental development is interfered with, so that the deaf child will be backward, or may even appear to be mentally deficient. Last July, a boy aged 13 who had been certified as mentally deficient, was subsequently discovered to be deaf. He was referred to the clinic and was found to be suffering from active catarrhal changes in each ear. The condition was treated, and in February this year the Headmaster of his school reports :—

> " This boy is a very interesting case. In Standard II he was declared to be M.D. and was certified as such. Now, however, his teacher and myself are convinced that he is no longer M.D. . . . . . . During the last three or four months his rate of progress has been greatly accelerated and his hearing has much improved as is evidenced by his eagerness to answer questions and a much more intelligent facial expression.

“ *Wells’ Classification*

“ Mr. A. G. Wells, Chief Aurist to the London County Council, in a recent article divides defective hearing in school children into three grades :—

“ GRADE I

This grade covers children who can hear the conversational voice at 20 ft. or over in ordinary classroom conditions. Their hearing loss by the gramophone audiometer test is up to 15 decibels and with the puretone audiometer 35 decibels. They can benefit by education in an ordinary elementary school. This grade also includes children with a greater hearing loss but whose speech and language development is good and who lip-read well.

“ GRADE II

These children hear and understand the ordinary conversational voice at between 20 and 2 ft. Their hearing loss with the gramophone audiometer test is between 15 and 40 decibels, and with the puretone audiometer 35 to 60 decibels. By reason of their defect they cannot be properly educated without special arrangements or educational facilities.

This grade is subdivided into IIa and IIb. Those children coming under IIa can be educated in school if special facilities are provided, such as a favourable position in the class, etc. Those in IIb require special school education but not that necessary with the severely deaf.

In this grade also come those whose hearing is worse than that described above but whose speech and language are not seriously affected.

“ GRADE III

Children in this grade can hear and understand the conversational voice at not more than 2 ft. if at all, though they may be able to hear vowels, with or without discrimination at a greater distance than 2 ft.

Their hearing loss by gramophone audiometer is 40 decibels or over, and is over 60 decibels with the puretone audiometer. Their speech and language are seriously defective and they require methods of teaching applicable to the severely deaf children who have not acquired speech and language naturally.

“ *Methods of Approach*

“ There are two distinct aspects from which the problem of the deaf child can be approached. Firstly, prevention and cure of the conditions which are responsible for deafness, and secondly, measures which aim at the reduction of the disability produced by deafness to a minimum.

“ It is fortunate that much can be done to alleviate this disability provided that even only a remnant of hearing is left. It would be difficult to exaggerate the value of the work that has been and is being done in this direction at the Royal Schools for the Deaf and elsewhere.

“ Here, however, I only want to touch on the detection and treatment of cases of early deafness, that is, on the prevention of severe deafness in children.

“ *Detection of Deafness*

“ Deafness in its early stages is practically never noticed either by the parents or teachers, nor is it easily detectable by hearing tests with the voice or watch. It is only by the routine use of a gramophone audiometer in schools that these cases can be discovered and referred for treatment at an early stage, before any marked damage to the ear with consequent severe loss of hearing has occurred. It is not until there is a hearing loss of 12–15 sound units, on testing with the gramophone audiometer, that the first symptom is noticed.

" At this stage parents will often volunteer the information that their child is not deaf but stupid or stubborn, when they are asked whether the deafness had been noticed. Or they will say that ' he can hear quite well when he wants to.' Incidentally, this last statement is quite correct, for the child, by concentrating his attention on what is being said, can fill in the syllables he does not catch from his imagination and from previous experience. But for him to do this, his undivided attention is necessary. If his mind is occupied with anything else he will appreciate that he is being spoken to, but will fail to understand what is being said to him.

" *Gramophone Audiometer*

" The gramophone audiometer is an instrument by means of which a number of children may have their hearing tested simultaneously. The children sit at desks with the earphone, which is connected to the special gramophone on which the test record is to be played, fitting closely and comfortably over one ear. The test record is the recording of a man's voice reading sets of numbers. In the record there are four sets of numbers and there are 12 numbers in each set. The gramophone is started and the children write down the four sets of numbers they hear in the four columns of the test sheet. The loudness of the voice decreases with each successive number read by a constant amount equal to three sound units. By correcting the test sheets after both ears have been tested it is possible to form an accurate estimate of the threshold of audibility for the human voice in each ear.

" For the older children a record with three digit numbers is used, but for the younger children a record with two digit numbers is found to be all they can manage.

" *Hearing Equivalents*

" The first numbers at the head of each column are sufficiently loud to be heard by those with a hearing loss of 30 S.U. or less and corresponds to the ordinary conversational voice at a distance of three–five ft. A child who cannot hear more than this in either ear, will, in all probability, also have a speech defect and would fall under grade IIb of Mr. Wells's classification and should receive special education in a ' hard of hearing ' class.

" The 11th number in the column is sufficiently loud to be heard only by those whose hearing is normal and the last number only by those whose hearing is above the average.

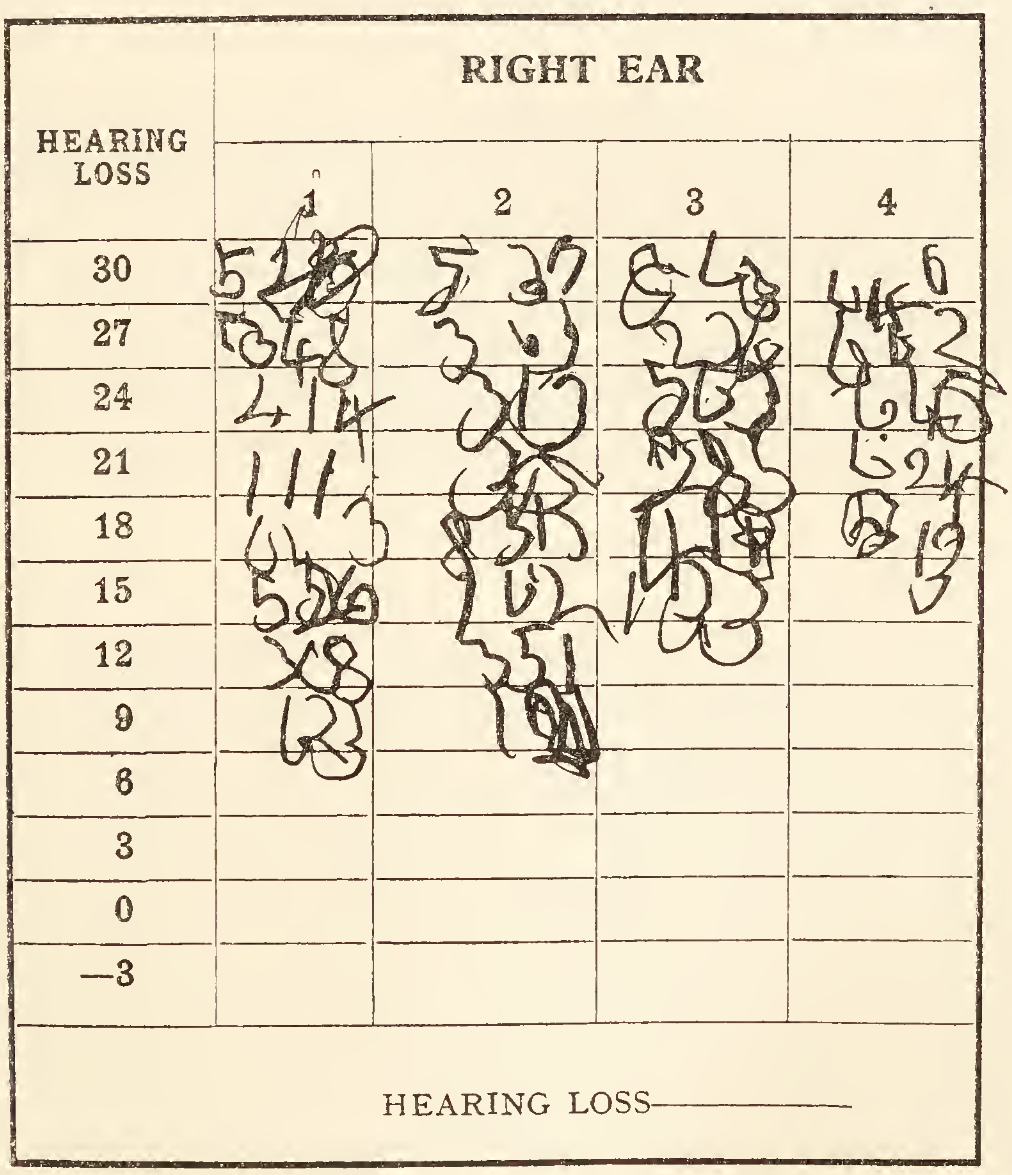
" *Difficulties*

" The testing of hearing by this method has, however, its limitations as it demands a certain performance standard on the part of the child. There are many difficulties inherent to the test and many extraneous factors which tend to make the child appear more deaf than it actually is.

" The most important cause of apparent deafness is the occurrence of extraneous noise. Under present conditions in which the children are tested in school, it is quite impossible to obtain a sound-proof room in which to carry out the test. Noise from traffic passing on the road, noise from anybody walking about outside the room or noise from neighbouring classrooms, however quiet the children try to be, is sufficient to interfere with the audibility of the record. In one school the testing one day had to be given up on account of the noise of the wind outside. For this reason, a certain allowance has to be made for extraneous noise when interpreting the results of tests. In Manchester we do not consider a child to have defective hearing unless the hearing loss is over 6 sound units.

" The commonest causes of failure to pass the hearing test on the part of a child himself are found to be :—Nervousness, an incomplete understanding of what he is required to do, and trying to produce neat figures. A child who tries to write neatly will write slowly. If he writes more slowly than the voice on the record speaks, he will be bound to omit figures, or so confuse them that the numbers he writes are not those which he has heard.

" Other causes of failure are laziness and mental dullness or even excessive tiredness. In two children examined, their writing was quite illegible, in one case because the child could only write with difficulty because of a birth palsy, and in the other case the child was suffering from chorea.



HEARING LOSS	RIGHT EAR			
	1	2	3	4
30	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	
9	[illegible]	[illegible]		
6				
3				
0				
—3				

HEARING LOSS————

" Because there are so many causes which may prevent the child from passing the hearing test at the first attempt, all children who appear to be deaf at the first examination are retested and given a second chance to pass the test before being referred to the clinic for an opinion as to the cause of the deafness. At this second attempt about 45 per cent. of those who failed at the first, passed the test.

" The testing of children's hearing by means of a gramophone audiometer is far from an ideal method, but there are certain very definite advantages to be gained by its use as a routine method in schools.

" The advantages and disadvantages of this method may be summarised as follows :—

" ADVANTAGES

(*a*) Deafness in its earliest stages can be detected, at a stage when damage to the ear is only slight and a complete cure is often possible. If a complete cure is not possible, arrest of the disease process at this early stage will ensure that disability from severe deafness does not result.
(*b*) The test is of the audibility of the human voice, and is, therefore, an intensely practical test, not artificial like the whispering test.
(*c*) Children who have defective hearing will, as a rule, try their best to hide their defect, and would far rather be thought to be lazy or mentally dull than own up to the fact that they cannot hear. The introduction of the test as a routine method of testing will elucidate many cases of stupidity and mental dullness.
(*d*) Much time can be saved from the fact that a number of children may be tested simultaneously.

" DISADVANTAGES

(*a*) In this test no indication is given of the distribution of the hearing loss over the frequency scale. Fortunately this is important only in a few of the cases seen, and when necessary this additional information can always be obtained by the use of a pure-tone audiometer test as well.
(*b*) There are many factors such as extraneous noise, nervousness, etc., which interfere with the accuracy of this means of testing.
(*c*) Younger children, in whom a test of this nature would be of the utmost value, cannot have their hearing tested by this means because their educational attainments are not sufficiently great.
(*d*) Children who are unable to write quickly and legibly give unreliable results with the test.

" *Cowan's Frames*

" The last two disadvantages of the gramophone audiometer test have been greatly reduced by the introduction of Cowan's frames.

" The method of testing by Cowan's frames is a modification of the ordinary gramophone audiometer method in which the children press down pictures instead of writing down the numbers they hear spoken.

" The subjects of these pictures are such that the child will know and recognise them quite easily, such things as cat, dog, ball, chair, etc., are painted on the vertical sliding panels in the Cowan's frames.

" The child stands or sits with the frames in front of him and the earphone fitting closely and comfortably over one ear. As the voice on the test record calls out the subject of a picture the child presses that picture down with his finger. By knowing the hearing loss which corresponds to each picture—this is indicated on the reverse side of the panel—an accurate estimate of the child's hearing loss can be obtained.

" This method of testing is far simpler than the ordinary method and demands a far lower educational status. It can be performed by children at the age of 4 years old.

" *Results of the Year's Testing*

" During the year 1937, 9,369 children in 27 Manchester Schools have had their hearing tested by means of the gramophone audiometer.

" Out of the 18,738 ears tested, the number showing a defect of nine sound units or more at the first test was 2,229. The number proving to have a defect of nine sound units or more after retest was 1,238. The number showing a hearing loss in the first test but proving on retest to be normal was 991 or approximately 45 per cent.

" 734 children with loss of hearing were notified to come to the clinics for examination ; of these 94 failed to attend, and 640 attended for examination. Of the children who attended, 381 had defective hearing in one ear only and 259 had defective hearing in both ears.

" The commonest causes of deafness were wax, catarrhal otitis media, and supurative otitis media.

" Wax was responsible for the hearing defect in 163 out of the 899 ears examined, catarrhal changes in the middle ear and eustachian tubes in 427, and suppurative otitis media in 271. Other conditions, including nerve deafness, labyrinthine degeneration, and otosclerosis were responsible in 17, and in 21 cases no abnormality was detected.

" Of these 21 cases in which it was impossible to determine the cause of the defect, 20 had only the slightest defect, and were in all probability due to some transient condition such as a temporary eustachian catarrh, in which complete resolution had occurred between the time of the test being completed and the time they were seen at the clinic. In the one remaining case, although the ear showed quite a considerable loss, it was quite impossible to determine the cause.

" *Analysis of Results*

" The hearing defects which have been discovered by means of the gramophone audiometer have varied considerably in their severity, from the slight defect which could not have been detected by any ordinary hearing test, to deafness of sufficient severity to justify admission of the child to the Royal Schools for the Deaf.

" The defects may be grouped according to their severity into :—

(*a*) *Subclinical defects*—where the hearing loss is under 15 sound units, and where no symptom is, as a rule, noticed, or at most the child is thought to be stupid, but not deaf.

(*b*) *Slight hearing defects*—where the hearing loss is 18–21 sound units the border line at which deafness is usually noticed.

(*c*) *Deafness*—where the hearing loss is 24 sound units or above, and where the deafness is usually recognised.

" Of the 899 ears examined this year, the distribution of the defects in the above groups was :—

Subclinical defects	(9–15 S.U.)	..	..	578
Slight defects	(18–21 S.U.)	..	..	192
Deafness	(24 S.U.)	..	..	129

" The commonest cause of the defective hearing in each of the three groups differs. This is interesting and instructive.

" 1. *Sub-clinical Defects.* In this group the commonest cause of the defective hearing is catarrhal changes in the ear. Of the 578 ears in this group, catarrhal otitis was responsible for the defect in 326 or 56 per cent. In 74 or 13 per cent. there was no active catarrhal process present, but in 252 or 43 per cent. there were active catarrhal changes in the ear. These were composed of eustachian catarrh, tubo-tympanic catarrh or acute catarrhal otitis associated with colds. The discovery of these cases of catarrhal otitis at this early stage is of the utmost importance, as treatment at this stage will in many cases enable the ear to be restored to normal, or at least arrest of the catarrhal process at this stage will ensure that the child is not left with a defect which will prove a disability.

" The next defect in order of frequency in this group is *wax* which was present in 113 cases or 19 per cent. Suppurative otitis was responsible for 110 cases or approximately 19 per cent.

" Of the 110 cases in which the defect was due to suppurative otitis, in 27 or five per cent. there was active disease present, and in 83 or 14 per cent. the defect was due to post-suppurative scarring. Other conditions occurred in nine cases, and in 20 cases no abnormality was detected.

" 2. *Slight Defective Hearing.* In this group there were 192 cases. The commonest cause of the defect in this group was suppurative otitis media, this being present in 83 cases or 43 per cent. Of these cases, in 39 or 20 per cent. active suppurative changes were present, and in 44 or 23 per cent. the deafness was due to post-suppurative scarring, adhesions, etc.

" Catarrhal otitis media was present in 69 cases or 36 per cent., active catarrhal changes being present in 53 cases (28 per cent.), and in 16 cases (8 per cent.) no active catarrh was present. Wax was responsible in 39 cases or 20 per cent.

" 3. *Deafness.* In this third and last group there were 129 cases. The commonest cause of deafness was again suppurative otitis media, this being responsible for the deafness in 68 cases or 61 per cent. In 40 cases (31 per cent.) the suppurative process was active, and in 38 cases (30 per cent.) was due to post-suppurative scarring.

" Catarrhal otitis was responsible for only 32 cases (24 per cent.). In 17 of these (13 per cent.) active catarrhal changes were present and in 15 (11 per cent.) there were no active catarrhal changes. Wax was responsible in 11 cases (8 per cent.), and other conditions in seven cases (6 per cent.).

" *Curability Rate*

" If the cases occurring in the three groups are divided into those in which improvement in the hearing can be expected and into those in which it cannot, some interesting figures emerge.

" 1. In 394 cases of the 578 occurring in the group of subclinical defects, that is, in 68 per cent., improvement in the hearing can be expected. In 157 cases (28 per cent.) no improvement is expected, and in 4 per cent. no abnormality was found.

" 2. In the group of slight hearing defects, improvement can be expected in 131 of the 192 cases in this group—again 68 per cent., but the cases in which no improvement can be expected is 61, an increase to 32 per cent.

" 3. In the third group, where deafness becomes noticeable, improvement in the hearing can be expected in 68 cases of the 129 in this group, that is in 52 per cent., and no improvement in 60 cases (47 per cent.).

" Hence it would appear that by the time deafness becomes noticeable the chances that treatment will restore the hearing to normal become considerably reduced, and by the time that the deafness is becoming severe the old saying that ' deafness is of two kinds—wax and that type that nothing can be done for ' is very nearly true.

" During the last few months 250 children who had been previously found to be deaf by the use of the gramophone audiometer and had received treatment were retested. It was found that about 66 per cent. showed improvement in their hearing and that in 33 per cent. the hearing was stationary or slightly worse. From the figures given above, this is about what was expected.

" *Causes of Deafness.*

" Turning to the causes of defective hearing and the degree of deafness that they produce, we see that the common conditions found at examination are catarrhal otitis, suppurative otitis and wax.

" *Catarrhal Otitis Media.* Of the 899 ears examined, catarrhal otitis was responsible for the deafness in 48 per cent. Most of these cases occurred in the group of subclinical defects, forming 56 per cent. of the group. In 43 per cent. there were active catarrhal changes, such as eustachian or tubo-tympanic catarrh and in the remaining 13 per cent. no active catarrhal process was present.

" In the group of slight hearing defect, the percentage of catarrhal otitis had fallen to 36 per cent., and in the deafness group it had fallen to 24 per cent.

" From these figures it would appear that the hearing defect produced by catarrhal otitis is slight rather than severe. It must, however, be remembered that unless the cause of the catarrhal process receives adequate treatment, the deafness, in these cases, is slowly progressive, and in adults the percentage of severe deafness due to catarrhal otitis is far higher than it is in children.

" The relative proportion of cases in which the catarrhal process is active decreases as the degree of deafness increases. The result of this is that the greater the degree of the deafness the less chance is there that anything can be done to improve the hearing.

" That these cases of early catarrhal deafness may be discovered at a stage when treatment will be effective is one of the main reasons for routine use of a gramophone audiometer in schools.

" *Suppurative Otitis Media.* Suppurative otitis media was responsible for only a small proportion of the defects occurring in the group of subclinical defects, active or recently active suppurative otitis being present in only 5 per cent., and post-suppurative scarring in a further 14 per cent. of the cases in this group. In the group of slight defective hearing, however, suppurative otitis became the commonest cause, being present in 43 per cent. of cases, while in the deafness group it was responsible for 61 per cent. In the last two groups active disease occurred with approximately the same frequency as post-suppurative scarring.

" From these figures it would appear that suppurative otitis is the commonest cause of deafness in children. Whether it is the commonest cause in children who are sufficiently deaf to need admission to the Royal School for the Deaf I do not know, but in the present series of children attending ordinary elementary schools suppurative otitis was certainly the commonest cause of the deafness.

" Because of the importance of suppurative otitis in the causation of deafness in this series, an analysis has been made of the causes of otorrhoea and the age of onset in the children who had a history of otorrhoea. In the present series a history of otorrhoea was obtained in 240 children. In 27 the age of onset was unknown. Of the remaining 213 cases, an analysis is given in the following table :—

CAUSES OF OTORRHOEA

Age of Onset	Colds and Ac. Tonsillitis	Injury	T. and A.	Teething	Measles	Scarlet Fever	Pneumonia	Influenza	Chicken-pox	W. Cough	German Measles	Cause Unknown	Total
0–3	9	—	1	2	17	6	2	1	—	1	1	6	46
4–6	16	2	1	—	16	5	3	—	1	1	—	9	54
7–10	23	5	4	—	4	7	2	—	—	—	—	13	58
10–14	43	—	—	—	1	1	1	3	1	—	—	5	55
Totals	91	7	6	2	38	19	8	4	2	2	1	33	213

" Owing to the uncertainty in many cases of the exact age of onset and owing to the small number of cases available, the cases have been divided into four age groups :—

The pre-school child — up to 3 years old
The infant school child — 4–6 years old
The junior school child — 7–10 years old
The senior school child — 11–14 years old

" It appears from the above figures that the commonest causes of otorrhoea in babies and infants is undoubtedly specific infectious diseases, the most prominent amongst which are Measles, Scarlet Fever, and Pneumonia, in order of their importance. In the junior school and the senior school the chief cause is the common cold, and infectious diseases take a very secondary position.

" Removal of tonsils and adenoids was responsible for the onset of otorrhoea in four cases in the junior school, and only one case in each of the preceding groups. This may be a coincidence, or a more likely explanation is that more tonsillectomies are done at this age than at any other.

" *Conclusion*

" The cause of defective hearing in the majority of children is either chronic catarrhal otitis media or the chronic suppurative otitis media.

" The cause of chronic catarrhal otitis media is, of course, infections of the nose and nasopharynx. The commonest cause of suppurative otitis media is apparently the common cold. Moreover, the commonest cause of chronicity in chronic otorrhoea is continual re-infection of the middle ear, via the eustachian tubes, from the nasopharynx ; particularly is this so in the case of children.

" Hence it would appear that the ultimate cause of deafness is to be found in the infections of the nose and naso pharynx in children, also that the common cold and nasal catarrh are chiefly responsible and that infectious disease only plays a subsidiary part.

" There is a superstition that colds and catarrh in children are more or less synonymous with the presence of tonsils and adenoids ; an analysis has, therefore, been made of the cases of catarrhal otitis in which active catarrh and in many instances a liability to frequent colds were present. The children with active catarrhal otitis were chosen because in these cases the catarrh was definitely the cause of the ear disease, and was still active.

" There were 190 children who had active catarrhal otitis. In 25 of these, the cause of the nasal infection was thought to be the presence of tonsils and/or adenoids ; in these cases operation was advised ; in a further 30 the tonsils and adenoids were not considered to be sufficiently diseased to warrant their removal. In 73 the tonsils and adenoids were perfectly healthy, and in the remaining 62 children the tonsils and adenoids had been previously removed, in many cases years before."

BRIAN ROBINSON,
SCHOOL AURIST.

(g) DENTAL DEFECTS

The total number of Inspections carried out by the Dental Surgeons in the schools during 1937 was 51,005. Out of that number 37,576 were found to require treatment—a percentage of 73.6. Taking the numbers for separate ages, one finds 63.5 per cent. requiring treatment at five years, then from 6 years to 12 years a percentage ranging from 72 to 79, a drop to 71.7 at 13 and to 64.2 at 14. Of the 37,576 requiring treatment 20,122 accepted it, a percentage of 53.3, slightly below the figure of previous years. In addition, 11,768 special cases were treated bringing the total number of children treated to 31,890, not much less than one-third of the total number of children in the schools.

As explained in previous reports, the number of dentists on the staff is not yet adequate for a full dental service, and certain schools are still without the regular routine service of a dentist, which involves a yearly inspection and treatment. The children in these schools can only be dealt with as " specials " for such urgent matters as the extraction of aching teeth.

So far as the schools included in the full scheme are concerned, children in all age groups are inspected at each visit of the dentist and offered treatment when required. The fact that a child or his parents refuse treatment in any one year does not debar him from inspection or treatment in any future year but it does debar him from treatment after refusal until the next visit of the dentist to the school.

The number of acceptances cannot yet be regarded as satisfactory. With a view to propagandist effort, an offer of the British Dental Board to give demonstration talks in the schools to older children was accepted and in November these talks were given in 26 schools of the city. In these talks, illustrated by convincing pictures, the necessity for preservation of teeth in good condition was emphasised and the process of decay demonstrated. There has not yet been time to estimate fully by results the value of the talks, but one or two individual cases may be quoted. In one Senior Boys' Department the dentist had visited the school only a few weeks before the talks. 57.4 per cent. had accepted treatment, 82 out of 143 children. The Principal Teacher, who had been only recently appointed to this school, seized the opportunity of the talks to press for more acceptances and the figure was raised to 81 per cent. At the inspection of the previous year, the acceptance rate had been 53.3. One of the dentists reports a school which at the previous inspection had given 74 per cent. acceptances, a relatively high figure, but which at the next inspection after the talks showed 83.5 per cent. of acceptances.

It is quite clear, therefore, that propaganda among the children themselves can do much in this direction, and one would emphasise the very large part that can be played and one is glad to say, as in the instance above, is played by many teachers. There is probably no branch of the School Medical Service in which the teacher can have greater influence than this. A few of the dentists have during the year given talks to mothers.

During the winter the Ministry of Health campaign for National Health has emphasised to the public the desirability of utilising to the full the public services provided. In the School Medical Service, unwillingness to take advantage of the service is exemplified more in relation to dentistry than to any other branch. Mr. B. Brown has made a comparison in his own area of the results from Senior, Junior and Infant Schools for the last two years, the comparison being not so much between the years—although the increase is worth note—as between the departments.

Acceptance Rates

		Seniors	Juniors	Infants
1936	..	46.6 per cent.	61.9 per cent.	64.5 per cent.
1937	..	53.3 per cent.	62.9 per cent.	68.7 per cent.

The much lower rate in the Senior Departments probably means that very often the decision is made by the children.

On the whole, there appears to be a strong case for demonstrations and talks to older children which might be part of the duties of a Senior Dentist or of any School Dentist with the gift of talking to children.

(*h*) ORTHOPAEDIC AND POSTURAL DEFECTS

Reference has been made under section (a) to the great diminution of the amount of rickets since the years immediately following upon the War. Last year the percentage of cases of rickets found at routine medical inspection still to require treatment or observation was only .47. Spinal curvature amounted to .58 per cent. and others to 1.5 per cent. As a register, however, of the real proportion of orthopaedic defects this may be incomplete, because of the fact that children with the grosser defects are already in the Cripple Schools.

Apart, however, from the findings at medical inspection, the Department has an almost complete record of children suffering from such defects, and the Cripple Schools and the special clinics have a very large proportion of these cases under treatment, others being dealt with at local hospitals.

It was not found possible to open the supplementary clinic in Dr. Rhodes' Home before the end of 1937, but it is hoped that it will be established early in 1938 ; this will relieve congestion in the present Orthopaedic Clinic and will be more convenient for cases on the extreme south side of the city.

MR. E. D. TELFORD's report on the present Orthopaedic Clinic held in the Lancasterian School building is as follows :—

"The number of new cases seen by me at the Clinic during 1937 was 309. They were made up as follows :—

Rickets	55
Deformities of Feet	52
Kypho-scoliosis	46
Anterior Poliomyelitis	20
Spastic Paralysis	20
Hallux Valgus	13
Hammer Toe	12
Torticollis	6
Traumatic Lesions	20
Various other deformities	65
	309

" In addition to these the number of other cases brought up for supervision and after care was 1,133.

" The treatment clinic has had a busy year and continues to do very good work, especially in the correction of postural deformities.

" The figures for the year are :—

Total attendances	5,374
Number of individual treatments :—	
Sunlight	5,181
Massage	5,253
Remedial exercises	4,171
Electrical	55
Fitting corrective appliances	80
Total Treatments	14,740

The treatment of minor cases of spinal curvature and of flat feet is undertaken at six of the School Clinics. Dr. G. W. Matthews supervises the treatment of the cases and the administration of the requisite exercises is given by a nurse who is qualified to carry out the treatment.

The total number of cases receiving treatment during the year was as follows, the children coming from the elementary schools, the secondary schools, and the day continuation and junior technical schools :—

	No. of cases of Spinal Curvature	Flat Feet, etc.
Elementary schools	351	337
Secondary schools	22	34
Day continuation and junior technical schools	4	29
Total	377	400

During the year the following were discharged as cured :—

	No. of cases of Spinal Curvature	Flat Feet, etc.
Elementary schools	144	257
Secondary schools	10	16
Day continuation and junior technical schools	2	16
Total	156	289

The number of attendances at the School Clinics for treatment was 7,460, while the number of medical examinations involved in their supervision was 2,371.

In certain cases the treatment by remedial exercises is supplemented by massage and this was given in 160 instances.

Where difficulty exists and prevents a child attending the School Clinic the nurse visits the schools and supervises the exercises at the school. During the year the nurse has paid 135 visits to schools for this purpose and has given 337 treatments.

(*i*) HEART DISEASE AND RHEUMATISM

Among the 32,000 children examined in the course of Routine Inspection, 267 cases of Organic Heart Disease, congenital or acquired, were found. Most of these cases were already known and some under regular supervision. Only a few over 100 were thought to require treatment.

At the supervision clinic of ailing children, liable from time to time to be absent from school, a large number of children suffering in greater or less degree from Rheumatism or Heart Disease are regularly seen. This clinic has indeed substantially become a Rheumatism Clinic. During 1937, 495 cases of Rheumatism, with or without Heart Disease, were seen at varying intervals and, in addition, 80 of congenital Heart Disease. Their sex incidence is shown in the following table :—

	Boys	Girls
Rheumatism with Heart Disease	87	143
Rheumatism without Heart Lesion ..	104	161
Congenital Heart Disease	34	46
	225	350

These figures may not accurately indicate the proportion of cases in the whole child population. They relate to children able periodically to attend a clinic and therefore do not include children seriously crippled by Rheumatism or by the more severe forms of Heart Lesion. Nearly all the children included in the table, who have Heart Disease in addition to Rheumatism, are able from time to time and often for long periods to attend school. Out of the 191 Rheumatic boys, 166 were attending school when last seen in 1937 and 271 of the 304 girls. Of the congenital cases too, 21 boys and 28 girls have been attending regularly ; 10 boys and 17 girls attend rather more fitfully, and only three boys and one girl were totally unfit. There must be, however, many more of the last group not attending and not able to come to the clinic.

It is interesting to note over a period of years the history of these cases and the following table endeavours to give a picture of the forms the rheumatic infection has taken :—

	Boys	Percentage	Girls	Percentage
Attacks of Acute Rheumatism only	20	= 10.4	35	= 11.5
Acute Rheumatism and Subacute attacks	30	= 15.6	36	= 11.7
Subacute Rheumatism only ..	61	= 31.0	110	= 36.1
Acute Rheumatism and Chorea ..	7	= 3.6	11	= 3.6
Chorea only	24	= 12.5	50	= 16.4
Chorea and Subacute Rheumatism	39	= 20.4	46	= 15.1

10 boys and 16 girls, most of whom had Heart Disease but without a definite history of the above conditions, are not included in the above table.

The relation of these conditions to the occurrence of Heart Lesions is shown in the next table :—

	Total No.	No. with Heart Lesion	Percentage with Heart Lesion
Acute Rheumatism only	55	32	58.2
Acute Rheumatism and Subacute	66	35	53.0
Subacute Rheumatism only ..	171	75	43.8
Acute Rheumatism and Chorea ..	18	13	72.2
Chorea only	74	23	31.0
Chorea and Subacute Rheumatism	85	29	34.1

These figures again confirm the fact that heart lesions are less likely to occur when Rheumatism takes the form of Chorea, rather than that of an Acute Arthritis. From this point of view, however, a combination of Chorea with attacks of Acute Arthritis is very serious.

The majority of the Heart Lesions were cases showing a persistent mitral systolic murmur. While in a large proportion of such cases the lesion may not be of great importance it is impossible in giving a prognosis to say so dogmatically in individual cases. The lesions were classified as follows :—

	Boys	Girls
TOTAL NUMBER	191	304
Heart Disease	87	143
Mitral Regurgitation	70	122
,, Stenosis	9	17
Aortic Regurgitation	8	4

While these figures do not confirm the idea that Mitral Stenosis is more common in girls than boys, as is often stated, they do show a definite preponderance of Aortic Regurgitation in boys.

A further interesting point that emerges from these histories is that out of 55 children who had only had attacks of Acute Rheumatism (followed by subacute attacks or Chorea) 39 had had only one attack and had been clear of symptoms since then—70.9 per cent. By contrast, 33 cases out of 74 who had Chorea only, had one attack followed by no other manifestation—only 44.6 per cent. There seems, therefore, a greater tendency for Chorea to recur and this shows itself in the histories, in which cases of repeated attacks up to eleven times in a few years have been noted. Attacks of Acute Rheumatism on the other hand seldom occur more than twice in any individual child in our histories.

The general picture presented, however, is that of a rheumatic infection manifesting itself in successive acute or subacute attacks (Rheumatism or Chorea) at varying intervals over a period of years. In some cases the children concerned are only free of symptoms for a few months at a time. When heart disease is part of the picture a new and in most cases permanent defect remains which may or may not cripple the child or adult to a greater or less degree, and may and does in some cases shorten life. It is comforting to learn from an authority like Dr. Schlesinger (*The Lancet*, March, 1938) that most children who survive rheumatic attacks are later able to lead almost normal lives in a relatively good state of health, attending school with average regularity and entering steady and useful employment. But there is always a proportion who are never free from relapses, with sometimes further damage to the heart. Out of the 495 cases studied, 120 would have benefited at some stage of their infection by removal to a suitable Residential Home, equipped fully for the treatment of cases of this type.

(*j*) TUBERCULOSIS

The arrangements with the Chief Tuberculosis Officer of the City continue, whereby all suspected cases found by the Medical Officers of the service are referred for an opinion, and the Chief Tuberculosis Officer notifies the School Medical Officer of all cases of tubercular disease among school children which are reported to him. Table III gives all the information which is known to the School Medical Officer in connection with children suffering from a tubercular disease.

FOLLOWING UP

The following up of all cases requiring treatment is as complete as possible. Where treatment is fully undertaken at a clinic the supervision is complete, but those cases which commence their treatment at a School Clinic and complete it elsewhere and those who receive the whole of their treatment apart from the Committee's own arrangements are followed up by a nurse. An effort is made for all the cases treated otherwise than at a clinic to be re-inspected in schools so that satisfactory information may be obtained that the condition from which any child suffers has received proper attention by the parents.

(*a*) BY NURSES

During the past year the nurses have paid 7,113 visits to homes and 6,214 visits to schools whilst following up cases. The nurses' visits to homes or to schools supplement each other. A visit to a school is sometimes necessary to confirm or otherwise information obtained from the child in school, and occasionally the process is reversed.

(*b*) BY SUPERVISION

Another method of following up especially of cases suffering from the more serious diseases such as rheumatism, lung affections, anaemia, etc., is by summoning the children, where fit to travel, to the Education Offices for periodical medical examinations. This work is carried out during five sessions of the week and the following table shows the number and classification of the cases which have been under supervision at the Central Clinic during the past year. Many of the cases attending the Supervision Clinic are found suitable for the Day Open Air or Residential Schools and are transferred to these Institutions as vacancies occur. Special reference to children so supervised suffering from Rheumatism will be found on an earlier page.

Defect or Disease	*Number of Cases*
Heart Disease—	
Organic	447
Functional	40
Anaemia	195
Lungs—	
Bronchitis	291
Other Non-Tuberculous Diseases	230

Defect or Disease	*Number of Cases*
Tuberculosis—	
Pulmonary, Definite	1
,, Suspected	38
Non-Pulmonary, Glands	16
,, Bones and Joints	3
,, Skin	1
Other Forms	13
Nervous System—	
Epilepsy	149
Chorea	295
Other Conditions	115
Deformities—	
Rickets	10
Spinal Curvature	8
Other Forms	98
Other Defects and Diseases	1422

(c) BY OTHER MEASURES

In cases where parents fail, after due warning, to provide adequate treatment for their children, they are summoned to attend at the Education Offices to give reasons for their non-attention to the School Medical Officer. Inattention is generally due to home difficulties, i.e., illness in the family or economic difficulties, and, in some instances, to lack of understanding. The number of cases not receiving treatment owing to inability or neglect is comparatively small.

The following table shows the numbers summoned before the School Medical Officer during the year. The desired result was obtained in over 90 per cent. of the cases :—

Defective Vision	271
Squint	28
Blepharitis	3
Conjunctivitis	2
Keratitis	1
Scabies	5
Impetigo	1
Other Skin Disease	1
Otorrhoea	6
Other Ear Diseases	2
Orthopaedic and Postural Defects	27
Rheumatism and Endocarditis	1
Hydrocele	1
Uncleanliness	101
Total	450

Special mention should be made of the 101 cases of Uncleanliness. These cases were those of persistent nits, but were of such a degree that it was felt compulsory cleansing should not be carried into effect, although voluntary cleansing had been refused. The parents were, therefore, summoned to attend at the Central Offices with the child, when the condition was brought specially to the notice of the parent and advice as to cleansing given. The cases were brought to the Office until the child's head was completely cleansed. In most of these cases the parents did not appear to realise that nits were of any moment, but the trouble involved in bringing the children for inspection proved to be a very important factor in causing the child to be cleansed effectively.

In the more stubborn cases of non-provision of adequate treatment, the parents were summoned to appear before the Rotas which primarily deal with non-attendance at school, and attendance at these Rotas is often a forerunner of legal proceedings. The number of cases dealt with by this method were 17 of non-provision of spectacles, 1 for inattention to disease of the ear, 1 for failure to provide treatment for ringworm of the scalp, and 14 for failure to comply with the Education Act 1921, Section 55 (5).

Legal proceedings were instituted in two cases for non-provision of suitable spectacles. The spectacles were, however, obtained before attendance at Court was demanded. In three instances, failure to comply with the Education Act 1921, Section 55 (5) resulted in legal proceedings and, in one of the cases, a fine of 10/– was imposed before the parents complied with the requirements.

ULTRA-VIOLET RAY TREATMENT

In the early part of the year this treatment continued to be given in the four clinics in Ancoats, Newton Heath, Cheetham and Stretford Road, but towards the end of the year it was decided to concentrate this work in the Ancoats and Stretford Road Clinics. At the Orthopaedic Clinic and the Day Open Air School the same treatment is also given to certain of the cases attending.

It will be seen from the table below that the majority of the children treated are suffering from either anaemia or from general or nervous debility. With these a very marked degree of success is obtained. The same is true, though not to so great a degree, in the case of children suffering from bronchial catarrh. Asthma cases, as in previous years, continue to give very satisfactory results.

Ultra-Violet Ray Treatment, 1937

	Discharged during the year		Still under treatment	
	Imp.	*Stat.*	*Imp.*	*Stat.*
Anaemia and debility	570	67	83	4
Bronchitis	174	31	31	
Asthma	27	1	4	
Unresolved pneumonia	1		2	
Sub-normal nutrition	57	7	11	
Rickets	50	4	8	
Enlarged glands	33	3	1	
Nervous diseases (inc. chorea)	29	5	5	
Pre-tubercular	3			
Tabes mesenterica		1		
Rheumatism	23	3	6	1
Alopecia	11		3	
Urticaria	1			
Seborrhoea	1			
Conjunctivitis	2			1
Blepharitis	8	3		
Corneal ulcer	1			
Recurrent styes	1			
Enuresis	1		1	
	1,118		161	

Number of children treated during the year : 1,279

SPEECH DEFECTS

The classes for the treatment of cases of stammering continue to be held at Shakespeare Street, Chorlton-on-Medlock.

The method of treatment is that advised by the late Professor Berquand. Since the commencement of the classes 1,933 children have been treated. This number is composed of 1,608 boys and 325 girls, which represents the usual proportion in the child population so far as sex is concerned.

During the year 1937 the number of classes held was five together with two classes for revision. The number of cases treated was 56 boys and six girls and of these 10 boys and two girls undertook a second course. At the completion of the treatment the results were classified as follows :—

Good	37
Fair, but improving	19
Poor	6

The number of new cases of speech defect reported during the year was 72. Of this number 66 were boys and six girls.

INFECTIOUS DISEASES

For the purpose of visiting schools where a number of cases of infectious diseases have occurred, two sessions per week of an Assistant School Medical Officer's time are specifically set aside.

There has been no outbreak of infectious disease of special significance in any school with the exception of one of diphtheria in a school in Withington during the few weeks preceding the summer holidays.

When it became evident that there were carriers in the school, arrangements were made to obtain a nose and throat swab from all the children on the school registers of both the infants' and junior mixed departments, as well as from all the teachers on the staff. In the case of those children not in attendance at school, the homes were visited with a view to bringing the child to school for a swab to be obtained or to arrange for the private medical attendant to swab the school children. As a result of the swabbing by private medical attendants and members of the school medical staff, 44 cases were found to show the presence of diphtheria bacillus. All were excluded from school until negative swabs were obtained.

The following table shows the numbers of cases in monthly totals as notified from the schools. The figures, of course, relate to cases on the registers of the Manchester schools but do not necessarily relate to children resident in the Manchester area.

Infectious Diseases, 1937
Number of new cases reported by Principal Teachers
on absence returns

	Measles	Whooping Cough	Scarlet Fever	Diphtheria	Chickenpox
January . .	45	220	132	125	239
February . .	70	175	94	87	168
March . .	89	191	88	80	224
April	235	297	123	85	397
May	251	184	103	52	312
June	234	198	118	61	258
July	161	110	139	121	387
August . .	58	58	74	50	122
September . .	186	90	166	122	109
October . .	528	56	264	133	348
November . .	896	34	180	126	290
December . .	1,093	16	169	78	301
Total . .	3,846	1,629	1,650	1,120	3,155

Cerebro Spinal Fever = 3

DIPHTHERIA IMMUNIZATION

During the year the Medical Officers of the Public Health Department have visited 44 schools and immunized those children whose parents have agreed.

In some of the schools the acceptance rate was as low as 15 per cent. while the average percentage of acceptance over the schools visited was approximately 33, being slightly lower than in the previous year.

The scheme has been outlined in previous Annual Reports, but the problem of increasing the acceptance rate still remains. The number of scholars whose parents were circularised was 24,480, and the number actually immunized was 7,394.

PHYSICAL EDUCATION

In regard to physical education, the School Medical Officer is often consulted, and the following is a report by the Organiser of Physical Education to the Committee, Mr. F. Smith :—

REPORT OF THE CHIEF ORGANISER

" *Introductory*

" Physical Education and Recreative work have been brought particularly to the notice of the public during the past year through the publication of the White Papers by the Board of Education and by the general Fitness Campaign emphasised in the press and by the demonstrations of school and recreative work held in various parts of the country to celebrate the Coronation.

" It is a pity that, owing to financial stress, more provision and extension of facilities should not be possible while the Government is encouraging the extension of playing fields and the building of gymnasia and swimming baths, and so take advantage of the grants available.

" *Provision of clothing and shoes for the physical training lesson*

" The question of proper clothing and footwear has for many years received the attention of the organiser, and whilst much has been done, a great deal still remains to be done. Many schools have already made great strides in this direction. All the Special Schools are now supplied with shoes, but such provision is not made in the normal school. Before the question of provision of special clothing and shoes can be adequately dealt with, the storage accommodation for them must be provided.

" *Refresher courses for teachers*

" Refresher Courses for the further training of teachers are probably the most important factors in the success of any scheme of physical education. The aims of the courses are to provide the teachers with a good working knowledge of the subject, to give a real understanding of the scope of the work and give the opportunity of personal practice in the various activities.

" Six training courses have been held for Manchester teachers during the year. The particulars as as follows :—

Duration	Type of Course	Number attending	For whom held
22 hours	Physical Training	62	Women teachers in Junior Schools
22 ,,	,, ,,	31	Men teachers in Junior Schools
12 ,,	,, ,,	38	Teachers in Infant Schools
12 ,,	,, ,,	47	Teachers in Infant Schools
30 ,,	Gymnastics	27	Women teachers in Senior Schools
30 ,,	,,	24	Men teachers in Senior Schools

" *Demonstration in celebration of the Coronation*

" One of the outstanding features of the year was the Demonstration of Physical Training given on the 8th of May, in celebration of the Coronation of Their Majesties King George VI and Queen Elizabeth. Over 3,000 Elementary School children from 112 departments took part. This was by far the largest demonstration of physical training given by Manchester School children for a great number of years.

" *Aims*

" The children were divided into groups of equal numbers of

1. Junior Boys and Girls
2. Senior Girls
3. Senior Boys

The aims were to show as far as possible the ordinary work in the school and to set a standard. The tables followed normal lines, and though of necessity they were designed for purposes of display they contained a maximum of hard work, and the spectacular effect was the result of a really complete physical activity and close co-operation on the part of each individual concerned.

" The demonstration was given at the Manchester Athletic Club Ground, Fallowfield, and by kind permission of the High Master of the Manchester Grammar School, the adjoining field was used as a space in which to marshal the children.

" *Visits to schools*

" The following is a summary of visits paid by the Organising Staff during the year :—

Boys' Schools	276
Girls' Schools	194
Mixed Schools	420
Junior Mixed Schools	227
Infants' Schools	137
Secondary Schools	12
Special Schools	25
Evening Schools	40
Swimming Baths	200
Galas and Matches	32
Teachers' Courses	120
Playing Fields	56
Voluntary duties	196
Other duties	160
	2,085

" *Apparatus in schools*

" The Senior Schools are now well equipped with portable gymnastic apparatus, where conditions allow.

" The amount of apparatus supplied to the schools depends on the facilities for using it, the qualifications of the teachers who are to use it, and storage accommodation. Portable apparatus is only supplied to those schools where there are teachers trained to use it. At present there is portable apparatus in 60 school departments :—

Central	Senior	All Range	Special
9	35	14	2

" The equipment recommended, where facilities are suitable is,

8	Gymnastic Benches
1	Vaulting Box
1	Vaulting Buck
2	Pairs Jumping Stands
1	Set Bench Supports
2	Rubber Mats
4	Fibre Mats
1	Agility Mat (Boys' Schools)
1	Swab and Tank

" It is not possible to supply all the material at once and a little is supplied each year.

" *Swimming and life saving*

" For the second year in succession there has been a drop in the number of attendances at the baths. The fall is due to the removal of families from slum clearance areas.

" The position at Wythenshawe is one which is causing grave concern, especially to parents who realise their children may lose entirely the opportunity of learning to swim. It is hoped that some facilities will be offered in Wythenshawe before long.

" The standard of swimming among school children in this City is very high. Great praise is due to Members of the Schools' Swimming Association and the Specialist Swimming teachers who are doing excellent work.

" *Statistics for 1937*

" The number of attendances made by school children at the swimming baths including the Committee's Baths at Styal together with land drill classes conducted at the various schools by the swimming teachers, were as follows :—

	Number of Schools	Number of Weekly Periods	Number of attendances
Summer	205	618	274,124
Winter	160	474	252,279
			526,403

"This represents a total drop in attendances at the Baths of 74,113.

" The swimming tests were held as usual, and the number of awards gained by school children were :—

BOYS	JULY	SEPTEMBER	TOTALS
25 yards	1,637	827	2,464
100 ,, ...	383	250	633
200 ,, ...	610	254	864
500 ,, ...	862	253	1,115
Medallion of Merit	209	81	290
			5,366

GIRLS			
25 yards	1,036	628	1,663
50 ,, ...	214	189	403
100 ,, ...	516	154	670
200 ,, ...	505	164	669
Medallion of Merit	81	58	130
			3,535

" Awards gained by children who took the Royal Life Saving Examinations :—

Bronze Medallions	672
Intermediate Certificates..	994
Elementary Certificates	1,031
	2,706

" The Hundred of Salford Competitions were held in September when 217 boys and 90 girls from Manchester Secondary, Central and Elementary schools took part. The Society awarded 22 silver medals.

Schools' Athletic Federation

SWIMMING SECTION

REPORT BY SECRETARY

" During the past year, our Annual Swimming Galas have been held in ten districts, and the finalists from each district competed in the final gala at Victoria Baths. The standard of swimming improves each year, and is at present on a very high pedestal. A very noticeable feature in all galas was the healthy and sporting competitive spirit of the children.

" An additional gala was held this year as part of our Coronation Week Celebrations. This took the form of inter-district squadron races for both boys and girls. A system of points was awarded to the various winners of every event and the district with the greatest number of points at the conclusion was adjudged the ' Coronation Champion.'

" The event was a great success, and the enthusiasm of the children was further increased when it was announced that the Education Committee had decided to award Coronation Certificates to the competitors.

" We were represented in the Northern Counties' Amateur Swimming Association inter-town team championships by boys' and girls' teams. The boys lost at Liverpool to our old rivals, in the 3rd round, but the girls went on to the final, only to be beaten by a touch after a most exciting race. The Executive Officers who accompanied the children on every occasion, were delighted with the behaviour of their charges, who not only gave a very good account of themselves in the water but were in turn modest in victory and cheerful in defeat. Every child seemed to realise that he or she was representing a great city.

" The Annual Competition for the Captain Webb Life Saving Shields was held in November. Three teams were entered from Manchester Schools and were placed as follows :—

St Paul's, C.-on-M.	Boys		1st	92 points
St. Thomas', Ardwick	,,		2nd	90½ ,,
St. Thomas', ,,	,,	B Team	4th	88 ,,

" BUKTA SHIELD (*Awarded for the highest number of Life Saving Awards gained by a Secondary School within 30 miles of Manchester*)

Whalley Range High School	1st
Levenshulme High School	2nd

" HEALEY SHIELD (*Awarded to the Elementary School gaining the highest number of Life Saving Awards within 30 miles of Manchester*)

St. Gregory's School, Ardwick

" *Organised Games*

" The success of any scheme of organised games depends largely on the playing facilities available. In Manchester the number of playing fields attached to schools is increasing. The Education Committee realise the importance of playing fields and insist on a playing field being included on the site of each new school. In a city like Manchester the question of space is a serious one and it is not always possible to secure a large enough site to ensure sufficient acreage for playing fields.

" *Laying out of playing fields*

" The lasting properties of a pitch depends largely on the length of time given for the turf to become established. When a new school is opened, the playing fields should be ready for use. To accomplish the establishment of good turf before the hard wear of school games begins, it is necessary that the draining, levelling and preparing the turf should be started at least two years before building operations actually commence.

" *Upkeep of playing fields*

" The question of upkeep is one that should receive every possible attention. Periodic mowing and rolling is not sufficient to keep pitches in condition. The progressive farmer, who insists on good crops, fertilizes his land every year. In the same way, a playing field which is to wear well should be given constant and regular attention. A bad playing surface is a source of danger to its users. It is impossible to produce good style of play on a poor pitch and the presence of weeds spoil the pitch and if allowed to grow will soon render a pitch both dangerous and unplayable. Many Authorities have realised the value of groundsmen. The apparently heavy expense of keeping them is counterbalanced by the saving effected by the good condition of the playing fields and less repair work. It is essential that the groundsmen chosen should be craftsmen with a real knowledge of the laying of pitches, the type of seed for various soils and have a good general knowledge of gardening. School gardens and borders would be under his control. He should be able to maintain the cutting machines. It is suggested that they might attend part of the Refresher Courses on Games to gain some knowledge of the purpose of their work.

" *Visits of school children to the parks, playing fields and recreation grounds*

" The playing pitches provided in the Parks and Recreation Grounds are a great boon to the children of a city of this size and are much appreciated by all concerned, but the lack of changing facilities and shelter in the event of sudden storms give cause for worry to those responsible for the welfare of children. In many cases, through lack of facilities, children are not able to change for their games. A few huts in the Parks would overcome this difficulty.

" During the year the attendance at the Parks, Playing Fields and Recreation Grounds were as follows :—

Boys	347,216
Girls	166,632

" Number of Departments using pitches :—

Summer	171
Winter	105

FOOTBALL SECTION

REPORT FROM SECRETARY

" *Organisation*

" A membership of 125 schools requires the organisation of :—

1 Senior League for 7 teams.
12 First Division Leagues for 60 teams.
28 Second Division Leagues for 150 teams.
7 Third Division Leagues for 32 teams.
4 Fourth Division Leagues for 18 teams, and
1 Special League for four teams, making a grand total of 271 teams and 53 leagues.

" In addition, seven ' knock-out ' Competitions were carried through and five representative teams run, whilst to complete the essential programme over 1,300 matches were played.

" The thanks of the Association are gratefully tendered to the 179 personal members, whose active interests enabled us to realise another successful season.

" Including those engaged in practices over 2,500 boys between the ages of 10 and 16 years benefited from the instruction, training and play provided by our organisation. The whole of this work was voluntarily undertaken out of school hours from August last until May of the current year, often in the face of difficulties imposed by lack of funds, shortage of equipment, and inadequate grounds.

" Such a contribution towards dealing with leisure time problems is not without special importance when leading voices are engaged in calling public attention to the value of systematic exercise."

CRICKET SECTION

REPORT BY SECRETARY

" During 1937,

44 Junior teams for boys under 12,
98 teams for boys under 14,
7 Senior teams for boys between 14 and 16 played

562 matches, and upwards of 2,300 Manchester schoolboys were enabled to take part in cricket, apart from ordinary school games. There were two City Boys' Teams which played in the County Competition.

" Two Manchester boys had the honour of playing for South Lancashire against North Lancashire. The training given voluntarily by a group of enthusiastic teachers enables many boys to have a very good start in the games before leaving school."

NET-BALL SECTION

REPORT FROM SECRETARY

" Taken in order of sequence the events of the year divided themselves into :—

1. *The Work of the City Team*

" After a disappointing year due to the inability of other towns to keep their fixtures, Manchester went forward as the league's leader to take part in the championship match in which they were successful in defeating Liverpool by 18 goals to 13.

" In the Tournament Liverpool were leaders and Manchester runners-up, Manchester being one goal behind Liverpool.

2. *Coronation Activities*

" (*a*) A Net-ball Party was organised entirely as a Coronation Celebration, and was attended by about 100 children who thoroughly enjoyed a programme of games, dances and a beetle drive, followed by supper.

" (*b*) *Net-ball Rally*. This was held at Ducie Avenue Schools. Representative teams from each league took part in a Net-ball Tournament in which every team played each other, the tournament beginning at 6 p.m. and finishing at 8-30 p.m.

3. The League and Knock-out Matches

" The Senior League commenced with five schools, the Intermediate with 45, the under 12 with 17, and the under 11 with five. Each league took part in a final competition in which the winners were St. Joseph's Central, Birchfield's Senior, St. Francis and Queen Street, respectively.

Resume of the Progress of the Girls' Section

" 1. Since 1925, the membership had increased from 25 to 50.

" 2. Where formerly the girls were practically all 13 to 14 years of age, the league now includes children from 11 to 17 years of age.

" 3. Every girl has an opportunity of taking part in a Lancashire Competition.

" 4. The Girls' Section is now an independent section with its own rules, and publishes its own hand-book."

SPORTS SECTION

REPORT FROM SECRETARY

" The following meetings were organised by the Athletic Association during 1937.

1. Championship Sports on Tuesday, May 11th.
2. Manchester and Salford 44th Annual Sports at Belle Vue on Wednesday, June 30th.

" Approximately 650 children representing 53 school departments took part in the Championship Meeting and a high standard of running was obtained. The thanks of the Association are due to the Manchester Education Committee for a share of the Grant-in-Aid which allowed us to assist these schools in outfitting their children.

" As a result of these sports a representative team was entered in the Lancashire Schools' County Championship and the Manchester boys were successful in winning the Championship Cup.

" For the Belle Vue Sports the competitors numbered over 2,000, and took part in 72 events. Over 150 teachers gave their services voluntarily for the work of training the children."

DANCING

REPORT BY THE SECRETARY

" The Schools' Folk Dance Festival Society continues its work in Manchester with pleasing results.

" Mr. Heath, H.M.I., very kindly came from London to adjudicate for both Junior and Senior Festivals. Unfortunately the dates coincided with the peak of the influenza period and several schools were forced to withdraw their entries. The standard of dancing of those who came was the highest yet experienced. Particularly commendable was the work done by the Special Schools. The entries were as follows :—

Junior Schools	19
Senior Schools	27

" The Manchester Branch of the English Folk Dance Society gave a short demonstration of Morris, Sword and Country Dances.

" The year ended happily with an outdoor demonstration by 1,000 children during Coronation Week.

TEACHERS' PHYSICAL TRAINING ASSOCIATIONS

REPORTS BY SECRETARIES

Women's Section

" The Association has again had a very successful year. Over 90 members have enjoyed ' Keep Fit ' evenings taken by the Assistant Organisers.

" A very enjoyable evening was spent with the Lancashire Keep Fit movement under the direction of Miss K. Evans.

" Miss Jean Milligan, a tutor from the Jordan Hill Physical Training College gave a most instructive and enjoyable course of Scottish Dancing."

Men's Section

" The membership of the Association is approximately 70, the average attendance being 45. The policy of inviting guest Organisers from various outside associations and Education Authorities to take the tables has been further developed, and this year six Organisers from outside Authorities have taken lessons for us. We have had the pleasure of visits from the Salford Teachers and the Birmingham P.T.A., the latter being a memorable occasion. The meeting was followed by the Annual Dinner when the Birmingham men were our guests.

" It is pleasing to note that though the number of teachers appointed to Manchester has dropped considerably the membership of the Association flourishes, a tribute to the wholehearted enjoyment obtained by the members."

" *Conclusion*

" In concluding this report the Organiser of Physical Education thanks the Education Committee, the Director of Education and the Chief Inspector of Schools for their continued and wholehearted support. He also desires to express his sincere appreciation of the loyalty and hard work of his colleagues on the Organising Staff. The maintenance of the high standard of work and general improvement has been attained by the friendliness, efforts and co-operation of the Heads and Assistant Teachers."

PROVISION OF MEALS

The following is statistical information regarding the provision of meals and the provision of milk.

MEALS

		Cases	Children
New applications.	Granted free	1,924	4,288
	On payment	73	143
	Refused	208	421
	Total	2,205	4,852
Meals supplied.	Free		2,072,269
	On payment		31,661
	Special Schools		102,430
	Total		2,206,360

Of the total number of meals supplied to children in attendance at the Special Schools, payment of 1d. per meal was made in 52,733 instances.

The number of individual children supplied during the year was 13,856, and the number of children on the meals list at the end of the year was 9,982. This number can be registered as the constant figure throughout the year.

Milk

The total number of bottles of milk supplied during the year was 2,261,786. The number of individual children receiving free milk during the year was 12,151. There is, of course, a scheme in operation whereby every child can be supplied with a daily ration of milk on payment.

An endeavour has been made during the year to comply with the desire of the Board of Education that children in receipt of free meals should be medically examined soon after they commence to receive free meals and at intervals thereafter.

The method has been to invite the attendance of these children at the nearest clinic. Heights and weights were taken, and the child generally surveyed, particularly as regards the question of nutrition. It cannot be claimed up to the present that any valuable information has been gained in this way. During 1937 it was only attempted to examine children who had just commenced having free meals during the year. In the course of the year over 1,400 were examined but at the end of the year there were still a little over 1,700 waiting for examination. The first difficulty which arises is that more than one-third of the cases do not come at all for examination in spite of repeated invitations and this number increases at subsequent examinations. Obviously it would be impossible to arrange for the examinations to take place at the canteen centres themselves on account of the lack of time available and at many centres there is no room available for a quiet examination. It would involve also the provision of a weighing machine at each canteen.

Apart, however, from this difficulty of having the cases examined, it is questionable whether much value will result from it. There is no means of deciding whether a rise in weight during the course of some months is any greater than it would have been had the child not received free meals and the only significant point, one that has only arisen in a very few cases, would be a failure to gain weight at all or an actual loss of weight. As regards the assessment of the child's nutrition, that is in itself so uncertain that not much significance could be attached to it.

BLIND, DEAF, DEFECTIVE AND EPILEPTIC CHILDREN

BLIND AND DEAF CHILDREN

All the 22 blind children known to the Authority and all the 62 deaf children so known are in Certified Schools for the Blind and Deaf respectively. In the case of practically all the deaf children discovered during last year, the children were subjected to special tests by the pure-tone Audiometer by Dr. and Mrs. Ewing in the University Department for the Education of the Deaf, before admission to a Deaf School was finally decided upon.

It was mentioned in last year's Report that during 1936 two classes (Junior and Senior) had been established in Queen St. School for the Partially-sighted, and it is hoped in due course to establish others in other districts of the City. Although recognised as a " Special School " by the Board of Education, these classes are an integral part of the Departments of the ordinary school in which they are placed. For reading, writing, composition, arithmetic and handwork, in regard to all of which these children are subject to certain limitations, these children form isolated units. Reading can only be of a type which is above a certain size and of marked clarity, or it may be of reading matter specially prepared and projected on the epidiascope. Writing must be in very large letters and figures (as in Arithmetic). Much of the work is done on blackboards, each desk being provided with a blackboard. Handwork also must not involve any strain upon the eyes. For wireless talks, whatever the subject, they assemble with normal pupils in the school ; also for vocal lessons in geography and history. The boys take handicraft with other boys of the school, and the girls take domestic work similarly. Singing, eurhythmics, folk-dancing are also joint activities although in Physical Training certain of the partially sighted are restricted and forbidden certain types of movement. There is therefore sufficient joint interest and activity to prevent partially-sighted children from developing any sense of inferiority. The Principal Teachers in both Departments have organised the arrangements and take a great practical interest in the individual children. The classes may now be regarded as established on a sound basis.

The problem of the Partially Deaf is in some respects more difficult. A standard by which to judge what children are to be included under this heading has been lacking ; perhaps the gramophone audiometer, reference to the use of which will be found elsewhere in this Report, will help to fix a standard. Until a standard is reached, it is impossible to say what proportion of children are partially deaf. The figure nine quoted in the statistics in Table III is certainly much below what it ought to be on account of the lack of a standard. After that problem is settled, there will remain the further point as to the best means for their education. Their removal to Residential Deaf Schools would be unfair to the children as segregating them too much from their fellows and the community, and emphasising their disability which after all is only partial. There remain the alternatives of special classes, or provision of special hearing-aids in ordinary schools combined, of course, with training in Lip-reading.

As a Government report on this subject is imminently expected while this Report is in preparation, a definite decision can be in the meantime deferred.

MENTALLY DEFECTIVE CHILDREN

The following table indicates the number of changes in personnel in the course of the year in the Day Special Schools of the City, and in the Residential Special Schools in which some of these children are maintained :—

	At 31st December, 1936	Admitted in 1937	Discharged in 1937	At 31st December, 1937
Day Special Schools	690	232	234	688
Residential Special Schools . .	29	6	7	28

Altogether, then, 957 children have been pupils in one of these schools for some part of the year.

The ultimate responsibility for selection of children for these schools, after their recommendation by teachers or medical officers in the course of inspection, rests upon certain medical officers recognised by the Board of Education, by virtue of their having attended a special course on this work provided each year by the Central Association for Mental Welfare in co-operation with the University of London. Each case is given careful consideration ; a full report of the child's educational capabilities and his qualities of character and behaviour is obtained from the Principal Teacher of the school attended. The main factors determining selection for a special school are a history of slow development, of failure to make more than limited progress in an ordinary school, and an estimation of actual intelligence. Faults of character, and especially marked impulsive tendencies and lack of self-control may involve a decision in favour of a Residential School ; justification for such a decision may also be found where the home atmosphere is prejudicial to the child's best interests.

Some reference should be made here to the work of the Backward Classes, of which there are five, in ordinary elementary schools. The pupils are not backward in the technical sense, i.e., they are not children whose inability to advance in school work is due to accidental and environmental causes. They are children who are innately dull, and therefore of the same type as the defective but of less serious degree. The age range of these classes is, with the exception of a few pupils, that of a Junior School. Senior Schools may be expected under the new schemes of reorganisation to be able to deal with most, though probably not all, of these children. Some of them after a trial are found to be certifiable as defective under the Education Act and are referred to Special Schools.

There is an examination by a Certifying Officer of every child who is proposed for admittance to a Backward Class, and a re-examination every year.

After-care

The arrangement by which cases of defective children leaving special schools or of defective children leaving ordinary schools are supervised by workers of the South-East Lancashire Association for Mental Welfare has continued, and there follows here a table showing the number of cases under supervision since the commencement of this arrangement in 1926 until last year. It will be noticed that out of 801 cases under supervision during 1937, 637 were in regular employment when last visited :—

	Males	*Females*	*Total*
(1) TOTAL CASES REFERRED TO THE SOUTH-EAST LANCASHIRE ASSOCIATION FOR MENTAL WELFARE SINCE JULY, 1926, TO YEAR ENDING 1937	1,149	962	2,111
(2) TOTAL CASES UNDER SUPERVISION OF SOUTH-EAST LANCASHIRE ASSOCIATION FOR MENTAL WELFARE DURING 1937, i.e., ALL UNDER 18 YEARS OF AGE	428	373	801

	Males	Females	Total
(3) CASES REPORTED DURING 1937	103	85	188
(4) OF (2) IN REGULAR EMPLOYMENT	344	293	637
(5) NUMBER OF VISITS PAID	606	528	1,134
(6) NUMBER OF REPORTS MADE	405	364	769

(7) SPECIAL INFORMATION REGARDING CASES IN GENERAL

	Males	Females	Total
Transferred to L.M.H.B.	46	32	78
Unable to trace	72	76	148
Deceased	2	—	2
Out of Area	6	1	7
Over 18 years of age	36	27	63
In Schools and Homes	3	3	6
Total	165	139	304

HIGHEST WAGE FOR MALES	53/–
HIGHEST WAGE FOR FEMALES	30/–
LOWEST WAGE FOR MALES	7/–
LOWEST WAGE FOR FEMALES	7/–

PHYSICALLY DEFECTIVE CHILDREN

The following table shows in convenient form the number of cases of the different types of physical defectives dealt with at the various Special Schools during 1937 :—

	December 31st, 1936	Admitted 1937	Discharged 1937	December 31st, 1937
Soss Moss School for Epileptics	93	36	46	83
Manchester Residential School for Cripples (Dr. Rhodes' Home)	73	52	52	73
Lancasterian Day School for Cripples	162	50	47	165
Manchester Residential Open-Air School for Delicate Children	70	140	135	75
Summerseat Residential Open-Air School for Delicate Girls	27	38	32	33
Crumpsall Day Open-Air School for Delicate Children	244	161	149	256

The Manchester Residential School for Delicate Children at Styal is not yet working to its full capacity. A new school and rest shed is in course of erection and both will be ready, it is hoped, early in 1938, after which it will be possible to accommodate 140 children. Under the present conditions, however, the numbers have had to be restricted to 70. The school work is being conducted meantime in the administrative block and all the Homes available for the school are not yet in use.

The work of the Residential and Day Schools for Cripples is separately reported upon below. The work of the other schools has continued during the year on the usual lines, and with marked resulting benefit to the children admitted. In the case of the Soss Moss Epileptic School complete cure can, perhaps, but seldom be achieved but there is definite improvement in a fair proportion of cases and all the children benefit to greater or lesser degree especially in general health.

Slight interference with the work of these schools is sometimes occasioned by outbreaks of infectious disease. This temporarily always interferes with discharges and admissions. Cases of diphtheria have occurred both at the Soss Moss School and at the Residential School for Cripples, but on the whole the amount of infectious disease in these schools is small.

SPECIAL SCHOOLS

MANCHESTER RESIDENTIAL SCHOOL FOR CRIPPLED CHILDREN
(DR. RHODES' HOME)

The work previously carried on in Swinton House and Parkfield has, during 1937, been transferred to the above home. The latter, which was used as a temporary Receiving Home for children who were being admitted to Public Assistance Institutions, has undergone considerable alterations to fit it for its new purpose. The transfer was effected in June, after three weeks' camp life at Squires Gate. The building has the advantage over previous arrangements that the children are now all housed in one home instead of two. Its arrangements are more suited to the purpose of the school, which is of semi-hospital type. For the first time in its history too, the home is provided with a separate school building which can be utilised by all the children who are not bed cases.

Mr. E. D. Telford, F.R.C.S., gives considerable detail of the nature of the work done in the school in the following Report :—

" The number of children in the School on December 31st, 1936, was 73 and during the year 52 new cases were admitted. The total number under treatment during the year was therefore 125. The cases are classified as follows :—

Rickets	40
Anterior Poliomyelitis	19
Scoliosis	12
Spastic paralysis	9
Ankylosis Hip	7
Hammer Toe	6
Hallux Valgus	5
Torticollis	4
Coxa Vara	2
Talipes	2
Fracture of Femur	2
Myasthenia	2
Other deformities	15
	125

" The number of cases treated was 14 more than in 1936, due mainly to an increase in cases requiring operation which were referred from the Lancasterian Clinic. It is for this type of orthopaedic case requiring operative correction that the School is peculiarly well fitted, since it can give the regular and detailed after-treatment which is so essential for a permanent good result.

" The great event of the year has, of course, been the removal of the School from Swinton to West Didsbury. This has meant a great deal of extra work for the staff ; their services have been unsparingly given with the result that the School is now very efficiently established in its new quarters.

" The number of cases discharged during 1937 was 52. These are classified as follows :—

Rickets	19
Hammer Toe	6
Scoliosis	4
Ankylosis of Hip	4
Torticollis	3
Hallux Valgus	3
Anterior Poliomyelitis	3
Spastic Paralysis	2
Coxa Vara	2
Other deformities	6
	52

" These cases were discharged in good condition mostly after operative treatment. All children discharged from the School are regularly brought up for re-inspection at the Orthopaedic Clinic.

" The general health of the School has been excellent throughout the year and we have had no epidemic disease.

" The number of operations performed by me at Booth Hall Infirmary on children from the School was 32."

LANCASTERIAN DAY SCHOOL FOR CRIPPLED CHILDREN

The work of the above School has, during 1937, continued on established lines justified by experience and results. Surgically, most of the cases are under the personal supervision of Mr. E. D. Telford, F.R.C.S., or of Mr. Harry Platt, F.R.C.S., while a few are seen periodically by other Orthopaedic Surgeons at one or other of the local hospitals. Treatment—massage, remedial exercises, electrical and sun-ray—is carried out by four qualified Masseuses. Education work is in the hands of Miss Nicholls and her assistants, who make a study of each individual case, with a view to fitting each child for the occupation best suited to him or her. A certain proportion of the less seriously crippled do not require to stay in this School until the end of their school career, but are discharged to ordinary schools. The tables below show first of all the types of cases treated at the School and secondly how cases were disposed of on leaving, as well as other particulars. It will be noted that all leavers, who were not transferred to other schools or other areas, were placed in work :—

SCHOOL RETURN FOR 1937

	Boys	Girls
Number on Register Dec. 30th, 1936	86	76
,, admitted during 1937	35	15
,, left ,, ,,	24	23
,, on Register Dec. 30th, 1937	97	68
Reasons for leaving School		
Transferred to Ordinary School	7	4
,, ,, School for the Mentally Defective	1	—
,, ,, Residential Cripple School	4	2
,, ,, Abergele (T.B.)	1	1
Deceased	2	—
Removed from Manchester	1	1
Left for work	8	15
Total	24	23

Work in which leavers were placed

BOYS	
Textile Design	3
Poster Design	3
Boot Repairing	1
Butcher	1
	8

GIRLS	
Office Work	8
Machinist	2
Finishing Garments	1
Packing	4
	15

THE FOLLOWING IS A LIST OF THE CASES TREATED AT THE SCHOOL DURING 1937

Flat Foot and Kyphosis	1
Anterior Poliomyelitis	47
Rickets	10
Scoliosis	10
Congenital Talipes	4
Fragilitas Ossium	2
Brachial Plexus Injury	3
Spastic Paralysis	16
Tuberculosis (quiescent) (Spine, hip, knee, ankle)	31
Arthritis	7
Cong. Deformities	5
Amputation Cases	5
Osteomyelitis	8
Achondroplasia	1
Injury to Knee	2
Birth Palsy	1
Sprengel Shoulder	1
Obesity and Genu Valgum	1
Fractures	3
Miscellaneous	8
Total	166

Treatments

Massage	4,371
Medical Gymnastics	5,676
Medical Electricity	3,630
Ultra Violet Rays	5,839
Plasters	10
Total	19,526

It may be interesting to quote the histories of a few of the children who have been placed in work during the past year :—

1. A boy of 15 years two months, tubercular spine, was in Swinton House two months and five years in Lancasterian School. He has had no other schooling. He had a special training in Drawing and Design and has been placed in Textile Design work.
2. A boy of 14 years nine months, spastic hemiplegia, was one year in Swinton House and eight and a half years in the Lancasterian School. Has one partially paralysed hand, but after training was placed in Textile Design.
3. A boy of 15 years, tubercular spine and knee, was four and a half years in Swinton House and four and a quarter in Lancasterian School. Placed in Poster work.
4. A girl of 15½ years, tubercular left knee, was two years at the Marple Cripple School and five years in the Lancasterian School. Had no serious schooling until aged 10. In March, 1937, passed the Second Year M.E.C. Examinations with 86 per cent. in Shorthand. Had a training in Bookkeeping ; could use a typewriter, and write Shorthand at 70 words per minute. Has been placed in work at a wage of 12/6 per week which, within six months, was increased to 17/6.
5. A girl of 15 years nine months, synovitis left knee, was four years in Swinton House and four years in Lancasterian School. In March, 1937, passed the Second Year M.E.C. Commercial Examination—70 per cent. in Shorthand. Has been placed in an office, commencing at 12/6 per week.
6. A girl of 16 years, spinal caries. Only schooling was in the Lancasterian School where she attended two years 10 months. She commenced there when nearly 14 years of age and was able to read but could do no writing, spelling or arithmetic. She has now been placed in the Office of the Crippled Children's Help Society at 10/–. Can use a typewriter and write Shorthand at 50 words a minute.

Miss Nicholls, the Principal Teacher, gives some account below of the activities of the Old Scholars' Guild.

" *Lancasterian Old Scholars' Guild*

" The Guild held its 16th Annual Meeting in the School on February 23rd, 1938, when tea was provided by the Invalid Children's Aid Association, which continues to act as the Care Committee to the School.

" Dr. Herd, the School Medical Officer, gave an inspiring address on ' Overcoming disabilities and developing possibilities,' illustrated by the life of President Roosevelt.

" In the unavoidable absence of Professor Telford, F.R.C.S., Mr. H. Platt, F.R.C.S., inspected the former scholars—their physical condition and surgical appliances. Arising out of the inspection, arrangements have been made for an artificial foot for one boy, and repairs to a peg leg for another. During the year Mr. Telford has given 39 consultations to 'old' scholars, performed one sympathectomy operation and seen those scholars who have been sent back to ordinary school, at six-monthly intervals. One girl consulted Mr. Platt about the advisability of her marriage and another girl came to school on the same subject.

" The Old Scholars' Association continues to develop its activities. Plans are in hand for a social evening and excursion to Chester during the year, and a magazine is in preparation for duplication and distribution by the Committee. The Old Scholars are prepared to 'follow up' those of their number who have home or employment difficulties and valuable work of this kind has been done during the year. The chief difficulties have been encountered amongst boys and girls who have spent long periods in hospital schools and return in adolescence to homes and conditions which are strange to them.

" ANALYSIS OF THE CRIPPLING DEFECTS OF THE 104 FORMER SCHOLARS

Infantile Paralysis	29
Rickets	7
Renal Rickets	1
Scoliosis	2
Hemiplegia	6
Tubercular Spine	17
,, Hip	7
,, Knee	12
,, Ankle	1
Amputated Leg	7
Congenital Dislocation of Hip	2
Congenital Talipes Equino-varus	1
Encephalitis Lethargica	1
Little's Disease	1
Spina Bifida	1
Flat Feet	1
Septic Arthritis	2
Arm Paralysis	5
Congenital Deformity of Feet	1
	104

" THE FOLLOWING TABLE SHOWS HOW THE 104 FORMER SCHOLARS ARE ENGAGED

	Boys	Girls	Total
Employed	54	43	97
Unemployed	1	3	4
Unemployable	1	1	2
Further Commercial Training	—	1	1
	56	48	104

Employed Boys

Occupation	Number	Wages Weekly Unless Otherwise Stated
Insurance Inspector	1	£300 per annum
Assistant Departmental Manager	1	£220 ,, ,,
Office work	10	15/– to £3
Textile Design	16	12/6 to £3 5s.
Printer's Proof Reader	1	£3 17s. 6d.
Boot Repairer	2	Own Shops
Newsagent and Tobacconist Shop	1	Doing well
Grocer's Shop	1	Doing well
Watchmaker	1	Comfortably off
Mill work	2	12/6 to 17/–
Poster Painters—Learners	2	12/6
Instrument Maker—Learner	1	13/8
Telephone Switchboard	1	—
Optical Frame Maker	1	25/–
Salesman	1	—
Butcher—Learner	1	—
Engineering	2	£2 13s. to £3 18s.
Lift Attendant	1	17/6
Apprenticed to Photography	1	—
,, ,, Dental Mechanics	3	—
,, ,, Sign-writing	2	18/–
,, ,, Wood Engraving	1	17/6
Social work with view to becoming a Probation Officer	1	—
	54	

Employed Girls

Occupation	Number	Wages Weekly Unless Otherwise Stated
Office work	13	12/6 to £3
Machining	10	£1 to £1 10s. and piecework
Knitting	1	Piecework
Boxmaking	1	£1 7s. 6d.
Embroidery	3	£1 5s. to £1 10s.
Artificial Flower Making	3	17/– to £1 5s.
Mill Worker	2	16/9 to £1 6s. 3d.
Saleswoman	1	—
Glove Making—Learner	1	17/–
Corset Making—Learner	1	18/–
Fine Needlework	1	£2
Cigarette Packing	2	£1 and £1 5s.
Biscuit Packing	2	18/–
Sweet Packing	1	15/–
Married. At home	1	—
	43	

" *After Care Work*

" The Crippled Children's Help Society continues to act as an After Care Committee. They report that during the past year 32 Lancasterians were placed in employment ; six of this number were placed by the School and nine older workers were placed in more suitable work.

14 surgical appliances were supplied to ' old ' scholars.
1 pupil has been sent to the new Training Centre at St. Loyes, Exeter, and is very happy there.
2 ' old ' pupils are working at the Metal Work Class.
4 girls have been working at the Needlework Class during the year. Two of them have since been placed in suitable employment.
1 boy has completed his apprenticeship in Dental Mechanics and has been granted £5 for dentistry tools and placed as an improver.

"After-care visiting is undertaken by the Home Visitors and useful reports are sent in periodically."

CHILD GUIDANCE CLINIC

In September, 1937, the control of this Clinic, which had been for a period of four years previously maintained by a private Committee, was taken over by the Education Committee and the Clinic established as part of the School Medical Service. Since its inception, the Clinic had been closely in touch both with schools and the School Medical Department, and several teachers and officials of the Education Committee were members of its Executive. This Report has contained in each year of the Clinic's existence a short report from its Director regarding school children who had been under its cognizance.

To carry out the functions of the Clinic, the Education Committee appointed Dr. W. Mary Burbury as a half-time psychiatrist, now recognised as its Medical Director, Mrs. Edna Henshaw, B.Sc., and Mr. W. T. Messer, M.A., M.Sc., as temporary psychologists (three sessions per week), and Miss Spedding, who had been full-time Social Worker to the voluntary clinic, was continued in the same post.

The Clinic is at present housed in the top storey of Atherton Street School in which four rooms—including a play room—have been allotted. Two morning, two afternoon and one evening session are given.

The psychiatrist and one of the psychologists also examine cases at the Remand Home (Alice Briggs Home) for the district, reporting on Manchester or outside cases as requested by the Magistrates. At the Clinic itself, however, it has been found impossible to deal with cases from outside Manchester.

Dr. BURBURY in a short report of four months' working, after referring to staff and rooms as above, continues :—

" We have also organised a play group and have been fortunate in securing the voluntary services of Mrs. Levinsky, from the psychological department at the University, and Miss Davidson for it. This group meets on Thursday afternoons and is intended for children who particularly need to associate with others, or for whom there is at present no vacancy for individual treatment. We hope that we may extend the time shortly.

" The intake of cases has been high this four months, higher in fact than it will be possible to maintain in future, on the present timetable. This is explained by the fact that a considerable number of cases had accumulated during the waiting period and have gradually been worked off.

" We are also getting a considerable number of applications from the outside authorities, which we have, of course, been obliged to refuse in view of the Committee's decision to limit the work, at present, to the city of Manchester.

" The work at the Remand Home has only been on a regular footing since the end of October, and the present arrangement is that, so far as is possible, all cases from the Manchester area are tested for their I.Q., and those which seem to need further treatment are then examined again. Where possible the home is seen and the parents interviewed. Reports are sent to the presiding magistrate of the Juvenile Court on all the cases seen.

"We are also seeing those outside cases, for which their respective authorities request examinations. This amounts to a visit for Mrs. Henshaw and myself once every week.

" I append a classified list of cases seen and examined during the four months.

Cases carried over from the Voluntary Clinic			27
Number of New Cases			51
Cases under treatment :	Psychiatric treatment	43	
	Play-group	6	
	Supervision	7	
	Total		56
Cases closed :	Advisory only	19	
	Parents unco-operative	2	
	Adjusted	1	
	Total		22
Cases seen in the Remand Home			17

" This last list is not quite complete as one or two were seen before we had devised a regular record plan.

" The following table gives the reasons why the children were referred for treatment at the Clinic :—

Pilfering	15
Truanting	3
Sex Misbehaviour	3
Nervousness	1
Tempers	4
Enuresis	2
Vomiting	2
Tics	2
Cruelty	1
Jealousy	2
Unable to keep a job	1
Unclassified	2
Backwardness	7

" Those whose intelligence had been tested before the end of the year were classified as follows :—

Intelligence quotient under 70	9
,, ,, 70 to 90	12
,, ,, 90 to 110	17
,, ,, over 110	3

" The number who were average and above average in intelligence is almost the same as the number of those who were below average."

STYAL COTTAGE HOMES

The medical supervision of the children at these Homes is very complete. Each child is thoroughly examined yearly, and the schedule of inspection is similar to that used for the purpose of routine medical inspection in the elementary schools. Each child is also re-inspected at intervals apart from any treatment which may have been found necessary at the routine inspection.

There is also a yearly dental inspection and subsequent treatment of all children in addition to the treatment of the more urgent cases. The dental inspection as well as the routine medical inspection is carried out as soon as possible after admission.

A Consultant Oculist visits the Institution periodically, or specially if required to do so.

Full use is made of the small hospital attached to the Institution. Any cases, however, requiring treatment at an Institution where a medical officer is in residence are transferred to Booth Hall Hospital for children.

A minor ailments' clinic is held each day at the Hospital, and attention is given to cases of minor orthopaedic and postural defects at school. These latter are taken in the school classes.

The following is statistical information regarding the medical supervision and treatment of the children.

Cases nursed in the Hospital attached to the Institution :—

Skin Diseases	32
Eye Diseases	4
Ear Diseases	29
Nose and Throat Diseases	34
Diseases of the Heart and Circulation	5
Diseases of the Lung (non-tubercular)	23
Suspected Pulmonary Tuberculosis	3
Rheumatism	8

In 20 cases the children received operative treatment at Booth Hall Hospital for adenoids and enlarged tonsils.

Cases of minor ailments treated at the Clinic :—

Scabies	10
Impetigo	12
Other Skin Disease	9
Minor Eye Defects	12
Minor Ear Defects	33
Minor Injuries, Bruises, Sores, etc.	209

One case of ringworm of the scalp was treated by X-rays at the Central Clinic at Deansgate. The number of treatments given to those cases of minor ailment was 30,857.

Twenty-nine cases of errors of refraction were dealt with by the visiting oculist, and in 24 instances glasses were prescribed and provided.

All the necessary treatment for dental defects was given during the year by the visiting dental surgeon.

SCHOOL CAMPS

The school camps continue to provide a holiday under healthy conditions for many thousands of school children. From early May until the end of September 120 children enjoy a week in camp under the supervision of a number of teachers. Boys and girls occupy the camp on alternate weeks throughout the season. All the children are inspected for the presence of vermin, skin disease, and other conditions which would prevent their attendance at camp, before being allowed to go, and a certificate is demanded from the parents declaring that no case of infectious sickness has occurred in the household during the past four weeks.

In addition to this weekly school camp, many hundreds of children are taken into camp from Friday evening until Monday morning by various charitable organisations in the City, while many hundreds more obtain a holiday in camp at the seaside.

The Jewish population in the City provide a holiday camp for their own children during the summer, and all the children are examined by a member of the school medical staff as to their fitness prior to departure.

NURSERY SCHOOLS

Manchester possesses two Nursery Schools with accommodation, respectively, for 45 and 120 children. A Medical Officer visits each School once a month, though in the case of Palmerston Street School the visit usually extends over two or three sessions. The number examined on admission was 190, of whom 59 required treatment for some condition—20 were cases of Skin Disease, six Squint, four Otitis Media, 10 Throat or Nose conditions, 13 Bronchitis and five Rickets. 1,380 re-inspections of children already in attendance were carried out by the Doctor.

Dr. E. Calderwood Smith, who is responsible for the children in Shakespeare Street Nursery School, contributes the following notes :—

" The largest proportion of the entrants comes from the Welfare Centre, recommended by the doctor in charge. It is particularly noteworthy, however, that where one of a family enters the nursery school, the younger members automatically follow. At the present time, 17 (out of 45) scholars have or have had brothers and sisters in this same school—the maximum group being six from one home, who have been nursery trained. This shows to some extent the appreciation and confidence of the parents.

" The type of home from which the Shakespeare Street child comes, varies enormously. Some are from very large families, living in overcrowded, rented rooms, a few are illegitimate children, some come from homes where the mother works or where parents are separated and no suitable guardian is available in the daytime—a growing proportion, however, now comes from good homes and are sent for companionship and the suitable training available in such a school.

“ Entrants, varying from two to three years of age on admission, mostly show defects at the first school examination. Minor rachitic conditions such as chest deformities and knock-knees are present in about 20 per cent. of these children and of these some five per cent. had sufficiently severe rickets to require treatment.

“ Dentition is on the whole poor and equally so in the child from the better home. In connection with this I made inquiries regarding feeding in infancy and found that the majority of these children had been entirely or to a large extent bottle-fed and were irregular attenders at the Welfare Clinics. The difficulty of Welfare attendance lay in the fact that the parents were out working or had large families of quite young children.

“ Throat and nose disease is very prevalent, nasal catarrh being the most common defect. This is usually cured after a year in school, partly by medicinal treatment and partly by nose drill and breathing exercises.

“ Ear disease is relatively common but owing chiefly to the proximity of the school clinic, yields well to treatment. Bronchitis is frequently found but clears rapidly, either because of the regular good food and sleep or the cod liver oil administered in school. Asthma, urticaria and allied allergic states are found but these seldom persist after a six months’ period of nursery school attendance.

“ Nervous debilities and non-establishment of cleanly habits are commonplace findings among the entrants. Within three months, even enuresis yields to nursery school education, and the five-year old leaver has invariably fully-established habits of cleanliness and is, in my opinion, nervously very stable and mentally extremely alert. In this group there is one child, sent by a private doctor, as he has an epileptic mother. His improvement in nine months from a screaming terrified neurotic to a cheeky little boy, is striking.

“ The nutrition is on the whole very good, a large number being excellent or good average on admission and many more achieving that state after six months in the school.”

Dr. MELVILLE, who is Medical Officer to Palmerston Street School, mentions in her Report some striking facts. After stating that few of the defects found are serious, being largely nasal catarrh and minor skin conditions, she proceeds as follows :—

“ The waiting list for admission now remains fairly steady at over 100 which, for a school of only 120 places, testifies to the parents’ growing appreciation of the benefits to be obtained by their “ under fives ” at the nursery school. Many of those on the list are younger brothers and sisters of children already or lately attending the school. Recently a mother asked that her two weeks’ old baby’s name should be added to the list in order to make quite sure of his being admitted as soon as he was two years old.

“ More and more the mothers are realising that here, in the best possible conditions in this noisy, busy industrial area, the pre-school child can get mental and physical care quite impossible in their own small homes. In the Nursery School the child has a chance to develop a healthy mind and body, to mix with and accommodate himself to others of the same age, to learn good habits of cleanliness, sleeping and sensible feeding. He finds air, space and peace to play happily.

" For every type of child the Nursery School caters—the spoilt darling, the overbold, the shy sensitive child, the delicate child, or one from an unhappy home. All are helped to adjust themselves socially and the foundations for building up character and disposition thus laid in these early important years may help to prevent some of them becoming the problem child of later years.

" For the delicate child the school is a very special help. Less than a year ago a mother, herself in very poor health, brought her little girl for admission. She was aged two, and had spent all but two months of her life in hospital with marasmus and a mastoid abscess. At medical inspection shortly after her admission I was appalled at her condition and did not think she was fit to be in school. She was extremely small, weak and fretful—could stand only with support and could not walk nor talk at all. Now, as the result of a great deal of perseverance on the part of the head teacher and of a student nurse, who has taken a particular interest in the child, she is almost unrecognisable. She is still small but is extremely bright, energetic and good tempered. She is constantly running about the nursery, climbing up over the pieces of apparatus—is usually the first and most energetic rider on the hobby horse and see-saw—eating all she is given and demanding more. In fact she is one of the nursery autocrats. She is in herself an excellent argument in favour of the Nursery School principle."

SECONDARY SCHOOLS

The medical inspection of children attending the Secondary Schools has been continued along similar lines to former years. The number examined in what might be termed the routine group is slightly less than last year, while the number of students found to require treatment is slightly higher. The percentage found to require treatment in the year 1936 was 20.8, while the percentage was 23.0 in the present year. The result of the year's medical inspection when compared with the previous year shows an increase in the number of external eye diseases, nose and throat diseases and deformities.

A considerable number of the Secondary School students asked for treatment of their minor ailments to be undertaken at the school clinics. The total for the present year, however, is slightly less than in the year 1936. There is, however, a distinct rise in the number treated for visual defect being 373 in the year 1936 and 511 in the year 1937. The numbers of cases of nose and throat defect and postural defect remained about the same. The number of children applying at the school clinic for dental treatment, however, is almost twice as great as in the former year. It is a matter for regret that there is no provision for dental treatment for the students attending the Secondary Schools, and the 235 students who received treatment during the year were mainly cases of extraction of aching teeth. When the dental service is sufficient for the needs of the City, the Secondary School students will be included within the scheme.

All cases of disease or defect not treated at a school clinic are followed up by the school nurses acting in collaboration with the principals of the schools.

DAY CONTINUATION AND JUNIOR TECHNICAL SCHOOLS

The medical examination of students at these schools is carried out on similar lines to those obtaining in the Secondary Schools. The conditions found to require treatment closely approximate the numbers found during the previous year. The facilities for treatment are the same as those for Secondary School students, though not the same proportion ask for clinic treatment. Quite an appreciable number of those found to have flat feet or spinal curvature did avail themselves of the facilities which the school clinic provides.

As in the case of the Secondary Schools, those obtaining treatment apart from the school clinics are followed up by the school nurses with the assistance of the head teachers.

EMPLOYMENT OF CHILDREN AND YOUNG PERSONS

The work of medically examining those children whose parents wish them to be employed out of school hours or to perform in places of public entertainment has been continued during the year.

In the year 1936 there were 1,304 children examined for this purpose and with the exception of two cases certificates were granted. In one case the child had opacities of both eyes and in the other the work was unsuitable, i.e., the boy was expected to deliver bags of coal.

There were 97 defects or diseases found amongst the children and of this number 54 were cases of defective vision, not wearing suitable glasses. Until defects are attended to, only a probationary certificate is issued. In all instances the defects were remedied and suitable glasses obtained before the full medical certificate was granted.

The number of cases of defective vision not wearing suitable glasses appears to be extremely large, but it must be remembered that the Authority is called upon to examine children who wish to be employed in the City of Manchester, and it does not follow that the child has previously been in attendance at a Manchester school.

MEDICAL EXAMINATION OF SCHOLARSHIP CANDIDATES, COLLEGE STUDENTS, ETC., AND OTHER MISCELLANEOUS MEDICAL EXAMINATIONS

A considerable amount of work is undertaken in connection with these examinations. During the year 669 individuals have been examined ; some have required a number of re-examinations, and many have required treatment, particularly refraction before they could be passed as medically suitable.

The particulars of the cases is as follows :—

(*a*)	Bursars, student teachers, scholarship candidates, student nurses, etc.	181
(*b*)	Entrants to and leavers from the College of Domestic Economy ..	119
(*c*)	Newly-appointed teachers	78
(*d*)	Appointment of officials and other miscellaneous examinations of officials and teachers	291
	Total	669

SPECIAL REPORTS

The following special reports are included this year :—

(1) ENQUIRY INTO THE INCIDENCE OF RICKETS AMONG ENTRANTS, *pages* 12 *to* 14.

(2) REPORT BY MR. BRIAN ROBINSON, THE AURAL SPECIALIST, ON " THE USE OF THE GRAMOPHONE AUDIOMETER FOR DETECTING DEAFNESS," *pages* 20 *to* 29.

(3) REPORT BY DR. GILBERT WOOLHAM ON " THE MECHANISM OF HEREDITY, FITNESS AND NUTRITION," *pages* 65 *to* 74.

THE PHYSICAL FITNESS OF SCHOOLBOYS

by

DR. J. GILBERT WOOLHAM

(From the Department of Physiology, The University, Manchester, and the Central School Clinic)

INTRODUCTION

The subjects of this paper are

(1) *The Mechanism of Heredity*

(2) *Fitness and*

(3) *Nutrition*

In a previous paper included in Dr. Herd's Annual Report for 1936, the theoretical results of the possible mathematical combinations of different kinds and degrees of quality of the bodily functions, in persons forming units of a population, were compared with the results obtained from tests. It was shown that the frequencies (Fs.) of human measurements that could be expected were found in the results from functional and other tests.

This paper, in the first instance, deals with a few kinds and qualities of genetic materials, showing how by their arrangements, in different combinations (one combination in each unfertilised ovum and one in each spermatozoon) these ultimately produce in the next generation values of quality which, when plotted as ordinates to a curve, produce one that is passably smooth and corresponding fairly closely with a normal probability curve (N.P.C.).

These varied ultimate values of quality are produced in the corresponding portions of fertilised ova which, when developed, cause the differences in quality between the corresponding parts of the persons in a population.

Later in the paper there are tabulated (1) the differences in quality of the sets of teeth in a random sample of an infant population and (2) the differences between the qualities of eyes as found by a Committee of Inquiry, shown by the number of children in grades, that is, by a frequency distribution (F.D.). In both cases, for comparison, the F.Ds. under a N.P.C. are given.

THE MECHANISM OF INHERITANCE

If the different portions of genetic material, which are included in the chromosomes of each unfertilised ovum, are not all on the same level of quality and if the corresponding materials in the spermatozoa are similarly unequal in quality, then there are possibilities of many grades in quality of fertilised ova being formed, if the addition of good material to good, as would be expected, produces a better combination than the addition of bad genetic material to bad.

A list of all the combinations of all the numerous kinds and qualities of genetic materials cannot be given but it is possible to give all the different combinations that form corresponding portions in a limited number of unfertilised ova and spermatozoa, if it be assumed that each of these portions consists only of three associated different complexes of genetic material, each of which, when taken as a whole, has, it is also assumed, one of three grades of quality ; A B C, with subscripts of quality representing those in unfertilised ova ; a b c with subscripts, those in spermatozoa.

In an ascending order, the grades of quality of the A B C complexes may be shown by A_1 A_2 A_3, B_1 B_2 B_3, C_1 C_2 C_3.

It is probable, if a large number of ova be taken into account, that 1 A_1 : 2 A_2 : 1 A_3 will be the ratio of the A complexes ; this applies also to the qualities of the B and C complexes. This ratio is probable if there are equal tendencies towards the production of good and bad genetic material during the formation of a large number of ova by many females and if it is likely that the better or the worse the quality the less will be the number of complexes that have it.

Therefore it is permissible to write A_1 A_2 A_2 A_3 ; B_1 B_2 B_2 B_3 ; C_1 C_2 C_2 C_3 for the ratios of the complexes which take part in forming the corresponding portions of many different unfertilised ova. In Table A, which follows, each A B C, with subscripts, stands for one of these portions.

The subscripts are not actual but comparative values and the total, which is put below each combination, is intended to represent the comparative value of the quality of that combination. It will be seen that equal totals do not, in every case, mean exactly similar mixtures of genetic materials which would cause exactly similar partial quality of development of corresponding parts in different persons. (This matter has not been dealt with further.)

TABLE A

The totals shown in this Table represent the comparative values of the qualities of the hypothetical corresponding portions of 64 *unfertilised* ova ; each A B C, with subscripts, being one combination in one ovum.

A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1	A_1
B_1	B_1	B_1	B_1	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_3	B_3	B_3	B_3
C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3
3	4	4	5	4	5	5	6	4	5	5	6	5	6	6	7
A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2
B_1	B_1	B_1	B_1	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_3	B_3	B_3	B_3
C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3
4	5	5	6	5	6	6	7	5	6	6	7	6	7	7	8
A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2	A_2
B_1	B_1	B_1	B_1	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_3	B_3	B_3	B_3
C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3
4	5	5	6	5	6	6	7	5	6	6	7	6	7	7	8
A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3	A_3
B_1	B_1	B_1	B_1	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_2	B_3	B_3	B_3	B_3
C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3	C_1	C_2	C_2	C_3
5	6	6	7	6	7	7	8	6	7	7	8	7	8	8	9

The 64 combinations, above, are made from 16 (A_1 A_2 A_2 A_3, B_1 B_2 B_2 B_3, C_1 C_2 C_2 C_3) thus preserving the 1 : 2 : 1 ratio between the qualities of the complexes.

All that has been written here concerning the combinations of the complexes in different unfertilised ova, may be applied to the corresponding combinations in spermatozoa and a Table (TABLE B) could be prepared exactly like TABLE A (except that capital letters would not be used) to show the 64 possible combinations that may be made on the assumption that a_1 a_2 a_2 a_3, b_1 b_2 b_2 b_3, c_1 c_2 c_2 c_3, in the ratios given, were the kinds and qualities of genetic materials available.

TABLE B

There is no need to print this Table because it can be made from Table A by the substitution of small letters for capitals, the subscripts remaining the same.

The combinations in TABLE A are fertilised by those in TABLE B, that is, 4,096 fertilisations occur and 64×64 corresponding portions are produced ; these portions, as the ova develop, form similar parts but not all on the same level of quality in different bodies. In order to save space, in TABLE C only a few of the 4,096 matings are given but the directions in the Table would allow of its being fully completed.

TABLE C

Each total shown is the comparative value of a hypothetical portion of a fertilised ovum.

$A_1\,a_1$ $B_1\,b_1$ $C_1\,c_1$	$A_1\,a_1$ $B_1\,b_1$ $C_1\,c_2$	$A_1\,a_1$ $B_1\,b_1$ $C_1\,c_2$	$A_1\,a_1$ $B_1\,b_1$ $C_1\,c_3$	and so on, laterally, until the portions of 64 spermatozoa have fertilised, separately, 64 $A_1\,B_1\,C_1$ combinations.
6	7	7	8	

$A_1\,a_1$ $B_1\,b_1$ $C_2\,c_1$	$A_1\,a_1$ $B_1\,b_1$ $C_2\,c_2$	$A_1\,a_1$ $B_1\,b_1$ $C_2\,c_2$	$A_1\,a_1$ $B_1\,b_1$ $C_2\,c_3$	and so on, laterally, until the portions of 64 spermatozoa have fertilised, separately, 64 $A_1\,B_1\,C_2$ combinations.
7	8	8	9	

Continue this Table, extended laterally, downwards until the 64 combinations, in TABLE A, have been fertilised in the manner indicated above.

The 4,096 totals, which occur in a completed TABLE C, may be classed into groups containing similar totals. This has been done in the next Table and the F.D. of them is set out below.

TABLE D

← BAD GOOD →

6	7	8	9	10	11	12	13	14	15	16	17	18	Comparative values
1	12	66	220	495	792	924	792	495	220	66	12	1	F.D.

The outlines given in TABLES A and B of the combinations that are possible between genetic materials during the production of both ova and spermatozoa and in TABLE C of the combinations that are possible through fertilisations is suggestive of what happens not only in one series of corresponding portions but in many, on a large scale. The F.D. under the ascending grades of quality, in TABLE D, is exactly the same as the coefficients of $(\frac{1}{2}+\frac{1}{2})^{12}$ but if more than three complexes, 12, for instance, under the same conditions as to quality, occurred in combinations, the F.D. that would appear in TABLE D could be calculated from $(\frac{1}{2}+\frac{1}{2})^{48}$ and if this sequence of numbers were plotted as ordinates to a curve, it would form one tolerably smooth and so nearly resembling a N.P.C. that it would cause little error to use a N.P.C. for calculations of F.Ds. of human qualities generally and so avoid a great deal of troublesome arithmetic. Certain deductions may be made because of this likeness, e.g., if the different combinations are portions of genetic material directing and controlling growth in stature, then stature in a large population should be distributed similarly to a N.P.D. This deduction is correct, for actual measurements show a N.P.D. of heights in a large random sample of adults. Also, as previously pointed out in this series of papers, the F.Ds. of (1) Measurements of ability shown by respiratory tests,

(2) Measurements of the percentages of Haemoglobin in the blood of boys, (3) Measurements of the Intelligence Quotient, all conform approximately to a N.P.D.

A similar distribution of other human measurements, unless they are altered unevenly by the influences of disease and environment, may be expected because genetic combinations control, in every part, the development, maturity and decline of the body, determining the duration of each period and the amount of change in each part.

The foregoing account has described how the corresponding combinations, in fertilised ova, may vary in quality and has shown how little the chance is (1 in 4,096) that all the genetic material in one combination, in one ovum, under the conditions assumed, will be of the best or of the worst quality (see Table D). When there are numerous complexes, each with its own grades of quality, as in the 48 chromosomes in man, there is, practically, no chance of a fertilised ovum having all the complexes of the best quality and of being able to produce a perfect individual.

FITNESS

The boy who has good fitness must have inherited many good parts and his body, in response to the stimulus due to the exercise of its functions, must have become adapted to withstand the wear and tear of life without yielding easily to the strain. He must have had a potentially good inheritance, which has not been damaged by disease or other harmful influences.

The size of a part in relation to the body to which it belongs is not a measure of its fitness but the relationship of function to size, and perhaps to age, may be used as a measure. Such relationships as that of functional ability to size and stage of development should be measured and used in making assessments because the young and immature parts in boys cannot be expected to reach the same grade in functional tests as older parts of more developed persons.

Fitness of Teeth

If a part of the body is able to work well for a long time against wear and tear without showing undue effects of strain, it is an indication of the soundness of its structure, of its good nutritional state and of its fitness. For example, in the case of the first dentition, which has a short " expectation of life," the teeth may be observed after a comparatively long period of use, the number of carious and missing teeth may then be noted and the fitness of each set of teeth may be assessed.

Mr. H. J. Eagleson, L.D.S., one of the Dental Staff of the Manchester Education Committee, during the routine examination of infants, marked the position of carious and missing teeth (first dentition only) on dental cards and from the details on these cards Tables E and F have been constructed. The cards of 280 unselected children were used.

TABLE E

← Bad Good →

20 to 18	17 to 15	14 to 12	11 to 9	8 to 6	5 to 3	2 to 0	?	?	Carious and miss. teeth. Grades of fitness of 1st dentition.
0.71	1.43	8.92	19.3	35.36	20.0	14.28	—	—	Percentage of 280 children.
0.5	0.89	6.99	23.99	36.16	23.99	6.99 0.89 0.50 8.38	0.89	0.5	Percentages of a N.P.D.

In the above Table the two places marked ? represent grades into which teeth more resistant and still more resistant to caries would be placed if they could be recognised by a dentist at inspection. The percentages of the N.P.D. in these grades may be added, as in the Table, to the 6.99 per cent. to make the two F.Ds. more comparable because the 14.28 per cent. includes cases that may have the very high grades of fitness that are shown by the positions of the question marks.

It is remarkable how closely the F.D., obtained from the results of dental examination, corresponds to that found by calculation. It would seem that heredity, which influences the nutrition, the soundness of structure, and therefore the fitness of teeth, is a very strong determining factor, also, that, for everyone to have none carious, all the complexes entering into the combinations, which govern structural development of teeth, would have to be at a high level of quality and there would have to be no deficiency in food of materials that are essential for good quality teeth.

The Table F, showing the symmetrical distribution of carious and missing teeth has been prepared from the same 280 dental cards as used for Table E.

TABLE F

Molar	Molar	Canine	Incisors		Incisors		Canine	Molar	Molar	Total carious and missing teeth both jaws.
			Lat.	Cent.	Cent.	Lat.				
260	252	25	43	54	54	45	26	249	253	
134	146	8	4	3	3	5	8	147	136	

Carious and missing teeth : Lower jaws of the same 280 children.

The contrast between the caries in the central incisors and in the molars of the lower jaw is very great. Roughly, there are in proportion to the numbers of these teeth, 47 times as many molars as central incisors affected. It would be interesting to know whether the low grades of fitness of the molars are due, or not, to genetic defect. Deficiency of minerals, vitamins, etc., might show more in the later and larger teeth.

Fitness of Eyes

In 1931, " *The* Report *of the* Committee of Inquiry *into* Problems *connected with* Defective Vision in School Children " was issued by the Board of Education. (*Published by H.M. Stat. Office.*) In the Report there is a Table " showing the total and the percentage incidence of various conditions of refraction, at each age, from 0–1 years up to 15–16 years."

The strength, in diopters, of the lens needed to make an eye emmetropic, when at rest, is taken as the " condition of refraction." The first percentage incidence given in the Table on page 11 of the Report is that for boys aged 0–1 years and this is quoted in Table G.

TABLE G

—2	—1	0	+1	+2	+3	+4	+5	+6	+7	+8	Errors of refraction. Grades of fitness.
1.	1.	0.	5.8	25.20	32.0	21.40	10.7	1.0	1.9	0.	Percentage of infants.
.02	.24	2.02	9.23	22.95	31.08	22.95	9.25	2.02	.24	.02	Percentages of a N.P.D.

The results of the inquiry concerning infant boys show that they have hypermetropic eyes which cannot focus for distance without effort and that from +2 to +4 diopters of accommodation are needed, in most of them, to focus objects beyond 20 feet. This is not a difficult task for young eyes that are healthy and it is easier in outdoor light. It is when a hypermetropic eye is required to see distinctly the details of small near objects, indoors, that the task is a strain and it continues to be a strain unless there is a lengthening of the antero-posterior diameter of the eye in relation to its focussing power, which occurs when the eye adapts itself to near vision, possibly through the long continued exercise in distinct focussing of small details. A slightly myopic eye, in a healthy condition, is perhaps better than a hypermetropic one for a town-dweller but the reverse would be better for uncivilised man living in open spaces and one is inclined to regard the long-sighted eye as the fitter one in an infant.

If the F.D. of infants in Table G who have different grades of eye fitness, be compared with the N.P.D. below it, a resemblance similar to that in Table E may be noted. It would appear that the F.D. in Table G, which is one of infants so young that there has been little time for anything extraordinary to happen, is due to the influences of heredity and this view is supported by the close resemblance between the two series of distributions in Table G. That is to say, food and environment can have no part in the prevention of the different grades of hypermetropia, unless they can make the genetic materials assume one level of quality.

Fitness of the Respiratory System

Tests of the respiratory system have been described in previous papers in this series where it has been shown that boys having different grades of ability to perform the tests can be distributed into groups containing numbers approximately like a N.P.D. and that boys at a Public School, who for many reasons should be of good quality, were distributed at a higher level on the scale of ability than elementary schoolboys.

Fitness of Muscle

Muscles at work demand more oxygen than when resting ; therefore a boy who is active must use his cardio-vascular and respiratory systems more than an inactive one and thus, by the exercise, develop a greater range of respiratory activity, which can be shown by respiratory tests. On this account, muscle fitness is probably related to ability in deep breathing, to a comparatively large vital capacity, to breath-holding time, etc., and grades of muscle fitness may correspond with grades of respiratory fitness.

Fitness of the Blood

In connection with this subject, fitness of the blood to carry oxygen, as shown by haemoglobin percentages, is dealt with only. The fitness of the blood to do other work may not always be associated with a high haemoglobin percentage.

Three F.Ds. of Hb%s conforming very closely, especially in one series of frequencies, to a N.P.D. are given in Dr. Herd's Annual Report for the year 1936. These F.Ds. are an indication not only of fitness but also of the paramount influence that quality of genetic material has upon the grades of quality of blood, that is, so far as the haemoglobin is concerned. It was found that boys, in a sample taken from an Institution where hours of work, play, sleep and other conditions were regulated and where good and sufficient food, proper clothing and outdoor country life were available, had their F.D. higher on the scale of percentages than boys who were living in Manchester and whose fathers were unemployed.

NUTRITION

Earlier in the paper, when referring to teeth, it was stated that heredity influenced the trinity—nutrition, soundness of structure and fitness. In fact, every part of the body is under its influence and if the genetic combinations are not good, the body cannot develop in an ideal manner, even if there is no lack of proper food materials.

According to Table D, the body is born to be good or, rather, each conception is destined to be good, in one half of the population ; but bodies may be robbed of their birthrights by improper nourishment before they are born ; there is a possibility of permanently unsound structure after birth if the materials for proper foundations of growth are lacking. The other half of the population, in contradistinction to the better half, will inherit a diminishing number of good parts of the body the nearer the individuals are to the lower grades of quality in spite of access to good food and a good environment.

There appears to be no possibility of improving the genetic material by diet so that all its varieties will be equally good and (because there will be always differences in quality) there will be always the comparatively " good " and " bad " combinations in fertilised ova though, in an ideal population, the " bad " would not produce bodily parts that are so low in quality as are developed from the " bad " now. Breeders do not attempt to change the " points " of animals by diet ; they select the animals in which good genetic combinations have been at work and mate them in the hope that a strain of good qualities will be fixed. This method of segregating the good combinations seems to be the only way but it would not be good policy to apply it to a human population on a large scale because, if good were married to good, without divorce, there would be poor choice only for the remainder.

Heredity may distribute children into grades of nutrition just as it distributes them into grades of other qualities and the Medical Officer may be confronted with children, in the lower grades of nutrition through inherited defect, along with those who have not had sufficient or who have had low grade food as the cause of their condition. It seems rather too much to ask that the nutritional states of these children should be differentiated into (1) those caused by defective feeding, past and present, (2) those due to other causes unless there is the help of a Staff trained to take family and personal histories and able, at meal-times, to enter homes to observe the amounts, the kinds and the qualities of the foods usually eaten by the cases to be diagnosed.

Usually, in those who do not, personally, realise what it means, there is apathy towards the state of good nutrition ; there is no hankering after it, just as in a child, who has not been made to see better with glasses, there being no personal standard, there is no desire for good sight. This apathy sometimes hinders the possible establishment of good nutrition, it silences the clamour that there would be for it if everyone had a personal standard.

Heredity does not influence all parts of the body equally and, therefore, does not ensure for all parts equally good nutrition and, thus, if the hair, skin and teeth are good, though some internal structures are poor, an erroneous estimate of nutrition easily may be made. The deceptive good appearance of the skin that is sometimes noticeable in a child who has anaemia, as revealed by the low percentage of haemoglobin, is a case in point.

In the absence of a personal standard and in the presence of deception by appearances, how are the grades of nutrition to be diagnosed ? If there is good structural quality, that is, good nutrition, it will show itself by high-grade functional ability. These abilities, in their different degrees, may be found out by appropriate physiological tests and assessments of nutrition may be made based upon the results and upon what is discovered by clinical examination.

CONCLUSION

The genetic combinations direct our bodies on different courses of development which, if not affected adversely by environment, would continue to the ends determined by the original genetic values. But there are many adverse influences and the best courses of life are not yet, but to be, when all these influences have been discovered and abolished. There would not be one level of qualities even in an ideal environment. But, if the frequency distributions of the qualities of a population be moved only a little higher up the scale by better social conditions, great efforts should be made to provide them.

ACKNOWLEDGMENTS

I wish to thank Dr. Herd, the School Medical Officer of Manchester, for his interest in this paper and for his helpful advice ; Dr. F. W. Lamb and Dr. F. W. Sansome of The University, Manchester, for criticism and welcome suggestions and Mr. H. J. Eagleson, L.D.S., for his kind co-operation in giving access to the results of his examinations.

PARENTS' CONTRIBUTIONS

Parents' contributions towards the cost of medical and dental treatment remain on a voluntary basis. The amounts collected last year are as follows :—

	£	s.	d.
Minor Ailments Clinics	265	13	5
Operative Treatment for Adenoids and Enlarged Tonsils ..	114	11	6
Provision of Spectacles under the Committee's Scheme ..	78	15	0
Payment for Treatment at the Day Open-Air School	339	8	11
Payment for Treatment at the Residential Schools	1,086	14	4
	£1,885	3	2

CO-OPERATION OF PARENTS, TEACHERS, SCHOOL ATTENDANCE OFFICERS, VOLUNTARY ASSOCIATIONS, ETC.

The School Medical Officer greatly appreciates the co-operation of parents, teachers, school attendance officers and the various voluntary associations in the City.

The teachers have very willingly afforded every facility to enable all scholars of the age of nine years and upwards to have their hearing tested by means of the gramophone audiometer. The test requires a separate room large enough to hold desks for 16 children, and that the room provided shall be kept as free as possible from outside noises if the test is to provide real results. There is no doubt that the ordinary work of the school is interfered with to an extent for a period, but the teachers have co-operated very cordially.

As mentioned in another part of the Report, the attendance officers give very active co-operation to the School Medical Officer and his department, and the voluntary associations are always willing to help where parents find difficulty in providing for the needs of their children. The City League of Help has provided helpers to accompany children to school clinics for treatment where parents were unable to accompany the child themselves and where the child was too young to travel alone.

SUMMARY OF WORK DONE

(ELEMENTARY SCHOOLS)

The following is a summary of the chief items of work done during the year 1937 :—

Children Medically Examined in School Routine	32,830
Children Examined as " Specials " in Schools and Clinics	48,862
Re-inspections (Schools and Clinics)	124,180
Number of Examinations by the School Dentists	62,773
Number of Treatments by the School Dentists	49,189
Number of Attendances at the School Clinics	507,831
Number of Inspections by Nurses in regard to Uncleanliness ..	252,886
Number of Home Visits made by the School Nurses	7,113
Number of other Inspections in School made by the School Nurses..	6,214
Number of Children Inspected in connection with Infectious Disease Outbreaks	14,660

CONCLUSION

This epitome of the work of the School Medical Service suggests the question whether there are any lines of development which should be contemplated in the immediate future. Each year usually sees some fresh development but others keep suggesting themselves as time goes on. At the moment the following are the most obvious needs :—

(1) An increase in the staff of Dental Officers in order to enable us to give a complete service of dentistry to every school in the City. It is hoped that during 1938 a Senior Dental Officer will be appointed to superintend the work of this section of the department.

(2) New clinic accommodation, apart from the dental provision just mentioned, is required on the south side of the City and also in the Clayton area.

(3) The success of the Classes for Partially Sighted Children makes it desirable that further classes should be established in other parts of the City for the children so afflicted.

(4) Some formal provision, either by arrangement with the Eye Hospital or under the Committee's own auspices, should be made for the orthoptic treatment of squint.

(5) As mentioned in an earlier part of the Report, residential provision for rheumatic children, whether with or without heart disease, should be made.

(6) New accommodation for the work now carried out in the Lancasterian Day Cripple School is under consideration. It is hoped, also, early in 1938, to open the Supplementary Orthopaedic Clinic in Dr. Rhodes' Home.

(7) Residential provision for educable mentally defective children is needed, particularly for those who suffer from instability or in whose case the home environment is unsuitable.

STATISTICAL TABLES

The statutory statistical tables appear at the end of the report and are divided into four sections both as regards examinations and treatment. (*a*) ELEMENTARY SCHOOLS ; (*b*) SECONDARY SCHOOLS ; (*c*) DAY CONTINUATION AND JUNIOR TECHNICAL SCHOOLS, AND (*d*) NURSERY SCHOOLS.

In accordance with the requirements of the Board of Education all children attending the Nursery Classes have particulars of their first medical examination recorded in the first age group and any subsequent examination up to and including the age of five years is recorded amongst the other routine inspections.

In the year 1938 it is proposed to record particulars of children treated at the school clinics as follows. Any child whose treatment was incomplete at the end of the year 1937 and whose treatment was continued into the year 1938 shall be registered as a " subject " in the table of defects found and recorded as a case treated in the treatment tables. This method, while reducing the number of re-inspections, will increase the number of " subjects " and will in addition show exactly the number not receiving treatment at the end of a given year. Now it will show the effectiveness of the Authority's scheme of treatment and following-up.

TABLE I

MEDICAL INSPECTIONS OF CHILDREN ATTENDING PUBLIC ELEMENTARY SCHOOLS (*see note a*)

A—ROUTINE MEDICAL INSPECTIONS

Number of Inspections in the prescribed Groups	
Entrants	11,783
Second Age Group	9,190
Third Age Group	7,962
Total	28,935
Number of other Routine Inspections	3,895
Grand Total	32,830

B—OTHER INSPECTIONS

Number of Special Inspections	48,862
Number of Re-inspections	124,180
Total	173,042

C—CHILDREN FOUND TO REQUIRE TREATMENT

Number of individual children found at Routine Medical Inspection to require treatment (excluding Defects of Nutrition, Uncleanliness and Dental Diseases).

GROUP (1)	For defective vision (excluding squint) (2)	For all other conditions recorded in Table II A (3)	Total (4)
Entrants	52	2,747	2,791
Second Age Group	831	1,686	2,363
Third Age Group	623	1,279	1,810
Total (Prescribed Groups)	1,506	5,712	6,964
Other Routine Inspections	225	702	830
Grand Total	1,731	6,414	7,794

TABLE II

A—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED DECEMBER 31st, 1937

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects*		SPECIAL INSPECTIONS *No. of Defects*	
(1)	Requiring Treatment (2)	Requiring to be kept under observation, but *not* requiring Treatment (3)	Requiring Treatment (4)	Requiring to be kept under observation, but *not* requiring Treatment (5)
Skin—				
(1) Ringworm—Scalp	—	—	4	—
(2) ,, Body	4	—	93	—
(3) Scabies	45	—	862	—
(4) Impetigo	141	—	3,971	—
(5) Other Diseases (Non-Tuberculous)	855	—	4,861	—
Total (Heads 1 to 5)	1,045	—	9,791	—
Eye—				
(6) Blepharitis	199	—	548	—
(7) Conjunctivitis	81	—	1,457	—
(8) Keratitis	4	—	20	—
(9) Corneal Opacities	7	1	27	—
(10) Other Conditions (excluding Defective Vision and Squint)	67	25	1,540	—
Total (Heads 6 to 10)	358	26	3,592	—
(11) Defective Vision (excluding Squint)	1,731	752	921	26
(12) Squint	396	46	261	3
Ear—				
(13) Defective Hearing	157	24	115	3
(14) Otitis Media	371	—	1,502	—
(15) Other Ear Diseases	360	28	1,627	—

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects*		SPECIAL INSPECTIONS *No. of Defects*	
(1)	Requiring Treatment (2)	Requiring to be kept under observation, but *not* requiring Treatment (3)	Requiring Treatment (4)	Requiring to be kept under observation, but *not* requiring Treatment (5)
Nose and Throat—				
(16) Chronic Tonsillitis only ..	228	715	318	9
(17) Adenoids only	100	109	73	1
(18) Chronic Tonsillitis and Adenoids	516	241	319	4
(19) Other Conditions	950	231	2,648	7
(20) Enlarged Cervical Glands (Non-Tuberculous)	65	78	335	3
(21) Defective Speech	34	123	19	11
Heart and Circulation—				
(22) Heart Disease : Organic ..	105	162	62	13
(23) ,, Functional ..	32	186	19	5
(24) ,, Anaemia ..	253	50	194	3
Lungs—				
(25) Bronchitis	428	251	258	2
(26) Other Non-Tuberculous Diseases	63	23	243	1
Tuberculosis—				
(27) Pulmonary : Definite	2	—	3	—
(28) ,, Suspected ..	22	—	19	—
(29) Non-Pulmonary : Glands ..	11	—	5	—
(30) ,, Bones and Joints ..	4	—	2	—
(31) ,, Skin ..	—	—	1	—
(32) ,, Other Forms	4	—	4	—
Total (Heads 29 to 32) ..	19	—	12	—
Nervous System—				
(33) Epilepsy	24	9	15	4
(34) Chorea	32	11	76	1
(35) Other Conditions	116	100	123	11
Deformities—				
(36) Rickets	95	60	15	1
(37) Spinal Curvature	136	56	28	4
(38) Other Forms	349	154	151	5
(39) Other Defects and Diseases (excluding Defects of Nutrition, Uncleanliness and Dental Diseases)	1,208	598	24,447	43
Total number of defects ..	9,195	4,033	47,186	160

B—CLASSIFICATION OF THE NUTRITION OF CHILDREN INSPECTED DURING THE YEAR IN THE ROUTINE AGE GROUPS

AGE-GROUPS	Number of Children Inspected	A (Excellent) No.	A %	B (Normal) No.	B %	C (Slightly subnormal) No.	C %	D (Bad) No.	D %
Entrants	11,783	2,281	19.36	8,621	73.16	865	7.34	16	.14
Second Age-group	9,190	1,476	16.06	6,754	73.49	939	10.22	21	.23
Third Age-group	7,962	1,537	19.30	5,767	72.43	654	8.21	4	.05
Other Routine Inspections ..	3,895	1,049	26.93	2,687	68.98	158	4.06	1	.03
Total ..	32,830	6,343	19.32	23,829	72.58	2,616	7.97	42	.13

Mental Deficiency (Notification of Children) Regulations, 1928

STATEMENT OF THE NUMBER OF CHILDREN NOTIFIED DURING THE YEAR ENDED DECEMBER 31, 1937, BY THE LOCAL EDUCATION AUTHORITY TO THE LOCAL MENTAL DEFICIENCY AUTHORITY

Total number of children notified, 130

ANALYSIS OF THE ABOVE TOTAL

N.B.—*No child is entered in more than one section of this Table*

Diagnosis	Boys	Girls
1. (i) Children incapable of receiving benefit or further benefit from instruction in a Special School :		
(*a*) Idiots	3	3
(*b*) Imbeciles	8	11
(*c*) Others	6	3
(ii) Children unable to be instructed in a Special School without detriment to the interests of other children :		
(*a*) Moral defectives	—	—
(*b*) Others	7	2
2. Feeble-minded children notified on leaving a Special School on or before attaining the age of 16	54	32
3. Feeble-minded children notified under Article 3, i.e. " special circumstances " cases	1	—
4. Children who in addition to being mentally defective were blind or deaf..	—	—
Grand Total	79	51

TABLE III

RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA

BLIND CHILDREN

At Certified Schools for the Blind	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
22	—	—	—	22

PARTIALLY SIGHTED CHILDREN

At Certified Schools for the Blind	At Certified Schools for the Partially Blind	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
—	13	100	—	2	115

DEAF CHILDREN

At Certified Schools for the Deaf	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
62	—	—	—	62

PARTIALLY DEAF CHILDREN

At Certified Schools for the Deaf	At Certified Schools for the Partially Deaf	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
—	—	7	—	2	9

MENTALLY DEFECTIVE CHILDREN

FEEBLE-MINDED CHILDREN

At Certified Schools for Mentally Defective Children	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
716	232	24	351	1,323

EPILEPTIC CHILDREN

CHILDREN SUFFERING FROM SEVERE EPILEPSY

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
35	114	—	10	159

PHYSICALLY DEFECTIVE CHILDREN

A—TUBERCULOUS CHILDREN

I—Children Suffering from Pulmonary Tuberculosis
(Including pleura and intra-thoracic glands)

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
80	—	—	26	106

II—Children Suffering from Non-Pulmonary Tuberculosis

(This category includes tuberculosis of all sites other than those shown in (I) above)

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
114	80	8	52	254

B—DELICATE CHILDREN

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
361	1,051	3	19	1,434

C—CRIPPLED CHILDREN

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
246	623	—	28	897

D—CHILDREN WITH HEART DISEASE

At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
—	323	—	8	331

CHILDREN SUFFERING FROM MULTIPLE DEFECTS

Combination of Defects	At Certified Special Schools	At Public Elementary Schools	At Other Institutions	At no School or Institution	Total
Mentally Defective and Partially Deaf ..	1	—	—	—	1
Mentally Defective and Pulmonary Tuberculosis	1	—	—	—	1
Epileptic and Cripple ..	—	1	—	—	1

TABLE IV

TREATMENT TABLES

GROUP I—MINOR AILMENTS (excluding Uncleanliness, for which see Table VI)

DISEASE OR DEFECT (1)	Number of Defects treated, or under treatment during the year: Under the Authority's Scheme (2)	Otherwise (3)	Total (4)
Skin—			
Ringworm—Scalp :			
(i) X-ray Treatment	3	1	4
(ii) Other Treatment	—	—	—
Ringworm—Body	90	1	91
Scabies	907	—	907
Impetigo	4,228	74	4,302
Other Skin Disease	5,362	247	5,609
Minor Eye Defects— (External and other, but excluding cases falling in Group II)	3,994	133	
Minor Ear Defects— (Treatment for more serious diseases of the ear (e.g., operative treatment in hospital) is not recorded here but in the body of the School Medical Officer's Annual Report)	4,710	251	4,961
Miscellaneous— (e.g., minor injuries, bruises, sores, chilblains, etc.)	25,465	432	25,897
Total	44,759	1,139	45,898

GROUP II—DEFECTIVE VISION AND SQUINT (excluding Minor Eye Defects treated as Minor Ailments—Group I)

DISEASE OR DEFECT	Number of Defects dealt with		
	Under the Authority's Scheme	Otherwise	Total
Errors of Refraction (including Squint) . . (Operations for Squint are recorded separately in the body of the School Medical Officer's Report.)	8,722	274	8,996
Other Defect or Disease of the eyes (excluding those recorded in Group I)	—	—	—
Total	8,722	274	8,996
Number of Children for whom spectacles were			
(*a*) Prescribed	4,230	102	4,332
(*b*) Obtained	3,927	95	4,022

GROUP III—TREATMENT OF DEFECTS OF NOSE AND THROAT

NUMBER OF DEFECTS

Received Operative Treatment												Received other forms of treatment	Total number treated
Under the Authority's Scheme in Clinic or Hospital				By Private Practitioner or Hospital, apart from the Authority's Scheme				Total					
(1)				(2)				(3)				(4)	(5)
(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)		
41	23	914	20	42	15	186	15	83	38	1,100	35	3,531	4,787

(i) Tonsils only.
(ii) Adenoids only.
(iii) Tonsils and adenoids.
(iv) Other defects of the nose and throat.

GROUP IV—ORTHOPAEDIC AND POSTURAL DEFECTS

	Under the Authority's Scheme (1)			Otherwise (2)			
	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Total number treated
Number of children treated . .	125	—	1,522	—	—	114	1,761

TABLE V

DENTAL INSPECTION AND TREATMENT

(1) Number of Children inspected by the Dentist—

(*a*) Routine Age-groups

Age . .	5	6	7	8	9	10	11	12	13	14	Total
Number	6,614	5,070	5,502	5,458	5,454	5,390	5,720	5,213	5,294	1,290	51,005

(*b*) Specials	11,768
(c) Total (Routine and Specials)	62,773
(2) Number found to require treatment	49,334
(3) Number actually treated	31,890

(4) Attendances made by children for treatment			49,189
(5) Half-days devoted to—			
Inspection	412		
Treatment	4,614	*Total*	5,026
(6) Fillings—			
Permanent Teeth	13,709		
Temporary Teeth	167	*Total*	13,876
(7) Extractions—			
Permanent Teeth	13,180		
Temporary Teeth	51,677	*Total*	64,857
(8) Administrations of general anaesthetics for extractions			6,408
(9) Other Operations—			
Permanent Teeth	3,132		
Temporary Teeth	57	*Total*	3,189

TABLE VI

UNCLEANLINESS AND VERMINOUS CONDITIONS

(i) Average number of visits per school made during the year by the School Nurses	12
(ii) Total number of examinations of children in the Schools by School Nurses	252,886
(iii) Number of individual children found unclean	12,975
(iv) Number of individual children cleansed under Section 87 (2) and (3) of the Education Act 1921	54
(v) Number of cases in which legal proceedings were taken—	
(*a*) Under the Education Act 1921	—
(*b*) Under School Attendance Byelaws	—

SECONDARY SCHOOLS

TABLE II

A—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED DECEMBER 31, 1937

Number examined according to Schedule	2,151
Number of these students found to require treatment	495
Number of " Special " Examinations	236

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects*		SPECIAL INSPECTIONS *No. of Defects*	
	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
Skin—				
(1) Ringworm—Scalp	—	—	—	—
(2) ,, Body	—	—	—	—
(3) Scabies	—	—	—	—
(4) Impetigo	2	—	13	—
(5) Other Diseases (Non-Tuberculous)	53	—	19	—
Total (Heads 1 to 5)	55	—	32	—

DEFECT OR DISEASE	ROUTINE INSPECTIONS No. of Defects		SPECIAL INSPECTIONS No. of Defects	
	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
Eye—				
(6) Blepharitis	12	—	2	—
(7) Conjunctivitis	1	—	8	—
(8) Keratitis	1	—	—	—
(9) Corneal Opacities	—	—	—	—
(10) Other Conditions (excluding Defective Vision and Squint	7	—	10	—
Total (Heads 6 to 10)	21	—	20	—
(11) Defective Vision (excluding Squint)	214	40	18	—
(12) Squint	5	1	1	—
Ear—				
(13) Defective Hearing	3	1	—	—
(14) Otitis Media	15	—	5	—
(15) Other Ear Diseases	9	3	3	—
(16) Chronic Tonsillitis only	1	9	1	—
Nose and Throat—				
(17) Adenoids only	1	—	—	—
(18) Chronic Tonsillitis and Adenoids	11	—	—	—
(19) Other Conditions	28	2	14	—
(20) Enlarged Cervical Glands (Non-Tuberculous)	4	3	1	—
(21) Defective Speech	3	1	—	—
Heart and Circulation—				
(22) Heart Disease Organic	6	4	—	—
(23) ,, Functional	3	12	—	—
(24) ,, Anaemia	14	—	1	—
Lungs—				
(25) Bronchitis	3	3	—	—
(26) Other Non-Tuberculous Diseases	2	1	—	—
Tuberculosis—				
(27) Pulmonary : Definite	—	—	—	—
(28) ,, Suspected	—	—	—	—
(29) Non-Pulmonary : Glands	1	—	—	—
(30) ,, Bones and Joints	—	—	—	—
(31) ,, Skin	—	—	—	—
(32) ,, Other Forms	—	—	—	—
Total (Heads 29 to 32)	1	—	—	—
Nervous System—				
(33) Epilepsy	—	—	—	—
(34) Chorea	1	—	—	—
(35) Other Conditions	5	5	2	—

DEFECT OR DISEASE	ROUTINE INSPECTIONS No. of Defects		SPECIAL INSPECTIONS No. of Defects	
	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
Deformities—				
(36) Rickets	—	2	—	—
(37) Spinal Curvature	24	7	—	—
(38) Other Forms	94	48	11	—
(39) Other Defects and Diseases (excluding Defects of Nutrition, Uncleanliness and Dental Diseases)	51	28	121	—
Total number of defects	574	170	230	—

B—CLASSIFICATION OF THE NUTRITION OF CHILDREN INSPECTED DURING THE YEAR IN THE ROUTINE AGE GROUPS

No cases

TABLE IV

TREATMENT TABLES

SECONDARY SCHOOLS

GROUP I—MINOR AILMENTS (excluding Uncleanliness, for which see Table VI)

DISEASE OR DEFECT	Number of Defects treated, or under treatment during the year		
	Under the Authority's Scheme	Otherwise	Total
(1)	(2)	(3)	(4)
Skin—			
Ringworm—Scalp :			
(i) X-ray Treatment	—	—	—
(ii) Other Treatment	—	—	—
Ringworm—Body	—	—	—
Scabies	—	—	—
Impetigo	12	4	16
Other Skin Disease	25	38	63
Minor Eye Defects—			
(External and other, but excluding cases falling in Group II)	17	10	27
Minor Ear Defects—			
(Treatment for more serious disease of the ear (e.g., operative treatment in hospital) is not recorded here but in the body of the School Medical Officer's Annual Report)	17	25	42
Miscellaneous—			
(e.g., minor injuries, bruises, sores, chilblains, etc.)	102	12	114
Total	173	89	262

GROUP II—DEFECTIVE VISION AND SQUINT (excluding Minor Eye Defects treated as Minor Ailments—Group I)

DISEASE OR DEFECT	Number of Defects dealt with		
	Under the Authority's Scheme	Otherwise	Total
Errors of Refraction (including Squint) .. (Operations for Squint are recorded separately in the body of the School Medical Officer's Report.)	511	62	573
Other Defect or Disease of the Eyes (excluding those recorded in Group I)	—	—	—
Total	511	62	573
Number of children for whom spectacles were			
(*a*) Prescribed	259	34	293
(*b*) Obtained	258	34	292

GROUP III—TREATMENT OF DEFECTS OF NOSE AND THROAT

NUMBER OF DEFECTS

Received Operative Treatment													
Under the Authority's Scheme in Clinic or Hospital (1)				By Private Practitioner or Hospital, apart from the Authority's Scheme (2)				Total (3)				Received other forms of treatment (4)	Total number treated (5)
(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)		
—	—	—	—	1	1	—	—	1	1	—	—	37	39

(i) Tonsils only.
(ii) Adenoids only.
(iii) Tonsils and adenoids.
(iv) Other defects of the nose and throat.

GROUP IV—ORTHOPAEDIC AND POSTURAL DEFECTS

	Under the Authority's Scheme (1)			Otherwise (2)			
	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Total number treated
Number of children treated ..	—	—	81	—	—	15	96

TABLE V

DENTAL INSPECTION AND TREATMENT

(1) Total inspected	235
(2) Number found to require treatment	235
(3) Number actually treated	235
(4) Attendances made by children for treatment	275

(5) Half-days devoted to—			
Inspection } Treatment } Included in Elementary Schools Report			
(6) Fillings—			
Permanent Teeth	73		
Temporary Teeth	—	*Total* ..	73
(7) Extractions—			
Permanent Teeth	108		
Temporary Teeth	31	*Total* ..	139
(8) Administrations of general anaesthetics for extractions			28
(9) Other Operations—			
Permanent Teeth	61		
Temporary Teeth	—	*Total* ..	61

TABLE VI

UNCLEANLINESS AND VERMINOUS CONDITIONS

No cases

DAY CONTINUATION AND JUNIOR TECHNICAL SCHOOLS

TABLE II

A—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED DECEMBER 31, 1937

Number examined	1,174
Number requiring treatment	199

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects*		SPECIAL INSPECTIONS *No. of Defects*	
	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
Skin—				
(1) Ringworm—Scalp	—	—	—	—
(2) ,, Body	—	—	—	—
(3) Scabies	—	—	—	—
(4) Impetigo	—	—	—	—
(5) Other Diseases (Non-Tuberculous)	24	13	—	—
Total (Heads 1 to 5) ..	24	13	—	—
Eye—				
(6) Blepharitis..	4	—	—	—
(7) Conjunctivitis	1	—	—	—
(8) Keratitis	—	—	—	—
(9) Corneal Opacities	—	—	—	—
(10) Other Conditions (excluding Defective Vision and Squint)..	1	2	—	—
Total (Heads 6 to 10) ..	6	2	—	—

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects*		SPECIAL INSPECTIONS *No. of Defects*	
	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment	Requiring Treatment	Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
(11) Defective Vision (excluding Squint)	73	33	—	—
(12) Squint	4	—	—	—
Ear—				
(13) Defective Hearing	2	1	—	—
(14) Otitis Media	15	—	—	—
(15) Other Ear Diseases	6	—	—	—
Nose and Throat—				
(16) Chronic Tonsillitis only	1	13	—	—
(17) Adenoids only	—	1	—	—
(18) Chronic Tonsillitis and Adenoids	—	—	—	—
(19) Other Conditions	16	10	—	—
(20) Enlarged Cervical Glands (Non-Tuberculous)	1	2	—	—
(21) Defective Speech	—	1	—	—
Heart and Circulation—				
(22) Heart Disease : Organic	3	8	—	—
(23) ,, Functional ..	2	13	—	—
(24) ,, Anaemia ..	1	5	—	—
Lungs—				
(25) Bronchitis	1	2	—	—
(26) Other Non-Tuberculous Diseases	2	1	—	—
Tuberculosis—				
(27) Pulmonary : Definite	—	—	—	—
(28) ,, Suspected	—	—	—	—
(29) Non-Pulmonary : Glands ..	1	—	—	—
(30) ,, Bones and Joints ..	1	—	—	—
(31) Skin	—	—	—	—
(32) ,, Other Forms	—	—	—	—
Total (Heads 29 to 32) ..	2	—	—	—
Nervous System—				
(33) Epilepsy	—	—	—	—
(34) Chorea	—	—	—	—
(35) Other Conditions	1	2	—	—
Deformities—				
(36) Rickets	—	—	—	—
(37) Spinal Curvature	1	—	—	—
(38) Other Forms	30	10	—	—
(39) Other Defects and Diseases (excluding Defects of Nutrition, Uncleanliness and Dental Diseases)	28	31	—	—
Total number of defects ..	219	148	—	—

B—CLASSIFICATION OF THE NUTRITION OF CHILDREN INSPECTED DURING THE YEAR IN THE ROUTINE AGE GROUPS

No cases

Year ended December 31, 1937

TABLE IV

TREATMENT TABLES

GROUP I—MINOR AILMENTS (excluding Uncleanliness, for which see Table VI)

DISEASE OR DEFECT (1)	Number of Defects treated, or under treatment during the year Under the Authority's Scheme (2)	Otherwise (3)	Total (4)
Skin—			
Ringworm—Scalp :			
(i) X-ray Treatment	—	—	—
(ii) Other Treatment	—	—	—
Ringworm—Body	1	—	1
Scabies	—	—	—
Impetigo	4	2	6
Other Skin Disease	10	28	38
Minor Eye Defects—			
(External and other, but excluding cases falling in Group II)	7	7	14
Minor Ear Defects—			
(Treatment for more serious diseases of the ear (e.g., operative treatment in hospital) are not recorded here but in the body of the School Medical Officer's Annual Report)	8	22	30
Miscellaneous—			
(e.g., minor injuries, bruises, sores, chilblains, etc.)	55	10	65
Total	85	69	154

GROUP II—DEFECTIVE VISION AND SQUINT (excluding Minor Eye Defects treated as Minor Ailments—Group I)

DISEASE OR DEFECT	Number of Defects dealt with Under the Authority's Scheme	Otherwise	Total
Errors of Refraction (including Squint) . .	72	29	101
Operations for Squint are recorded separately in the body of the School Medical Officer's Report.)			
Other Defect or Disease of the Eyes (excluding those recorded in Group I)	—	—	—
Total	72	29	101
Number of Children for whom spectacles were			
(*a*) Prescribed	40	9	49
(*b*) Obtained	45	9	54

GROUP III—TREATMENT OF DEFECTS OF NOSE AND THROAT

NUMBER OF DEFECTS

Received Operative Treatment													
Under the Authority's Scheme, in Clinic or Hospital (1)				By Private Practitioner or Hospital, apart from the Authority's Scheme (2)				Total (3)				Received other forms of treatment (4)	Total number treated (5)
(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)		
—	—	—	—	1	—	1	1	1	—	1	1	19	22

(i) Tonsils only.
(ii) Adenoids only.
(iii) Tonsils and adenoids.
(iv) Other defects of the nose and throat.

GROUP IV—ORTHOPAEDIC AND POSTURAL DEFECTS

	Under the Authority's Scheme (1)			Otherwise (2)			
	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Residential treatment with education (i)	Residential treatment without education (ii)	Non-residential treatment at an orthopaedic clinic (iii)	Total number treated
Number of children treated . .	—	—	39	—	—	18	57

TABLE V

DENTAL INSPECTION AND TREATMENT

(1) Total inspected			14
(2) Number found to require treatment			14
(3) Number actually treated			14
(4) Attendances made by children for treatment			16
(5) Half-days devoted to—			
Inspection } Total included in Treatment } Elementary Schools Report			
(6) Fillings—			
Permanent Teeth	2		
Temporary Teeth	—	*Total* . .	2
(7) Extractions—			
Permanent Teeth	27		
Temporary Teeth	3	*Total* . .	30
(8) Administrations of general anaesthetics for extractions			8
(9) Other Operations—			
Permanent Teeth	Nil		
Temporary Teeth	Nil	*Total* . .	Nil

TABLE VI

UNCLEANLINESS AND VERMINOUS CONDITIONS

No cases

NURSERY SCHOOLS

TABLE II

A—RETURN OF DEFECTS FOUND BY MEDICAL INSPECTION IN THE YEAR ENDED DECEMBER 31, 1937

Number examined on admission	190
Number found to require treatment at that inspection	59
Number of re-inspections	1,380

DEFECT OR DISEASE (1)	ROUTINE INSPECTIONS No. of Defects Requiring Treatment (2)	ROUTINE INSPECTIONS No. of Defects Requiring to be kept under observation, but *not* requiring Treatment (3)	SPECIAL INSPECTIONS No. of Defects Requiring Treatment (4)	SPECIAL INSPECTIONS No. of Defects Requiring to be kept under observation, but *not* requiring Treatment (5)
Skin—				
(1) Ringworm—Scalp	—	—	—	—
(2) ,, Body	—	—	—	—
(3) Scabies	—	—	—	—
(4) Impetigo	1	—	18	—
(5) Other Diseases (Non-Tuberculous)	19	—	18	—
Total (Heads 1 to 5)	20	—	36	—
Eye—				
(6) Blepharitis	2	—	—	—
(7) Conjunctivitis	—	—	3	—
(8) Keratitis	—	—	—	—
(9) Corneal Opacities	—	—	—	—
(10) Other Conditions (excluding Defective Vision and Squint)	—	—	4	—
Total (Heads 6 to 10)	2	—	7	—
(11) Defective Vision (excluding Squint)	—	—	—	—
(12) Squint	6	1	1	—

DEFECT OR DISEASE	ROUTINE INSPECTIONS *No. of Defects* Requiring Treatment	 Requiring to be kept under observation, but *not* requiring Treatment	SPECIAL INSPECTIONS *No. of Defects* Requiring Treatment	 Requiring to be kept under observation, but *not* requiring Treatment
(1)	(2)	(3)	(4)	(5)
Ear—				
(13) Defective Hearing	—	—	—	—
(14) Otitis Media	4	—	9	—
(15) Other Ear Diseases	1	—	3	—
Nose and Throat—				
(16) Chronic Tonsillitis only	—	3	—	—
(17) Adenoids only	1	—	—	—
(18) Chronic Tonsillitis and Adenoids	1	3	—	—
(19) Other Conditions	8	—	5	—
(20) Enlarged Cervical Glands (Non-Tuberculous)	2	1	—	—
(21) Defective Speech	—	—	—	—
Heart and Circulation—				
(22) Heart Disease: Organic	—	—	—	—
(23) ,, Functional	—	—	—	—
(24) ,, Anaemia	—	—	—	—
Lungs—				
(25) Bronchitis	13	—	1	—
(26) Other Non-Tuberculous Diseases	1	—	—	—
Tuberculosis—				
(27) Pulmonary: Definite	—	—	—	—
(28) ,, Suspected	—	—	—	—
(29) Non-Pulmonary: Glands	—	—	—	—
(30) ,, Bones and Joints	—	—	—	—
(31) ,, Skin	—	—	—	—
(32) ,, Other Forms	—	—	—	—
Total (Heads 29 to 32)	—	—	—	—
Nervous System—				
(33) Epilepsy	—	—	—	—
(34) Chorea	—	—	—	—
(35) Other Conditions	1	—	—	—
Deformities—				
(36) Rickets	5	—	—	—
(37) Spinal Curvature	1	—	—	—
(38) Other Forms	4	1	—	—
(39) Other Defects and Diseases (excluding Defects of Nutrition, Uncleanliness and Dental Diseases)	8	5	31	—
Total number of defects	78	14	93	—

B—CLASSIFICATION OF THE NUTRITION OF CHILDREN INSPECTED DURING THE YEAR IN THE ROUTINE AGE GROUPS

No cases

Year ended December 31, 1937

TABLE IV

TREATMENT TABLES

GROUP I—MINOR AILMENTS (excluding Uncleanliness, for which see Table VI)

DISEASE OR DEFECT (1)	Number of Defects treated, or under treatment during the year: Under the Authority's Scheme (2)	Otherwise (3)	Total (4)
Skin—			
Ringworm—Scalp :			
(i) X-ray Treatment	—	—	—
(ii) Other Treatment	—	—	—
Ringworm—Body	—	—	—
Scabies	—	—	—
Impetigo	15	—	15
Other Skin Disease	28	1	29
Minor Eye Defects—			
(External and other, but excluding cases falling in Group II)	12	—	12
Minor Ear Defects—			
(Treatment for more serious diseases of the ear (e.g., operative treatment in hospital) are not recorded here but in the body of the School Medical Officer's Annual Report)	20	1	21
Miscellaneous—			
(e.g., minor injuries, bruises, sores, chilblains, etc.)	33	2	35
Total	108	4	112

GROUP II—DEFECTIVE VISION AND SQUINT (excluding Minor Eye Defects treated as Minor Ailments—Group I)

DISEASE OR DEFECT	Number of Defects dealt with: Under the Authority's Scheme (see note b)	Otherwise	Total
Errors of Refraction (including Squint) (Operations for Squint are recorded separately in the body of the School Medical Officer's Report)	8	—	8
Other Defect or Disease of the Eyes (excluding those recorded in Group I)	—	—	—
Total	8	—	8
Number of children for whom spectacles were			
(*a*) Prescribed	3	—	3
(*b*) Obtained	3	—	3

GROUP III—TREATMENT OF DEFECTS OF NOSE AND THROAT

NUMBER OF DEFECTS

Received Operative Treatment													
Under the Authority's Scheme, in Clinic or Hospital (1)				By Private Practitioner or Hospital, apart from the Authority's Scheme (2)				Total (3)				Received other forms of treatment (4)	Total number treated (5)
(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)	(iv)		
—	—	—	—	—	—	—	—	—	—	—	—	12	12

(i) Tonsils only.
(ii) Adenoids only.
(iii) Tonsils and adenoids.
(iv) Other defects of the nose and throat.

GROUP IV—ORTHOPAEDIC AND POSTURAL DEFECTS

No cases

TABLE V

DENTAL INSPECTION AND TREATMENT

(1) Total inspected			82
(2) Number found to require treatment			49
(3) Number actually treated			35
(4) Attendances made by children for treatment			48
(5) Half-days devoted to—			
Inspection	Total included in Elementary Schools Report		
Treatment			
(6) Fillings—			
Permanent Teeth	—		
Temporary Teeth	—	*Total* ..	—
(7) Extractions—			
Permanent Teeth	—		
Temporary Teeth	93	*Total* ..	93
(8) Administrations of general anaesthetics for extractions			10
(9) Other Operations—			
Permanent Teeth	—		
Temporary Teeth	4	*Total* ..	4

TABLE VI

UNCLEANLINESS AND VERMINOUS CONDITIONS

No cases.

THE CLOISTER PRESS L
Heaton Mersey
Manchester